California HealthCare Foundation

SNAPSHOT

The State of Health Information Technology in California

2011

Introduction

The use of health information technology (HIT), defined as the software used to store, retrieve, share, and use clinical information effectively, has been growing within the state of California. HIT tools have the potential to reduce errors and adverse clinical events, and to improve the quality and efficiency of patient care. However, significant progress remains before these benefits can be fully realized.

This snapshot is the second comprehensive overview of HIT adoption and use in California; the first snapshot was published in 2008. The results reported here describe the use of HIT by physicians, hospitals, and community clinics and reveal overall growth in adoption, with certain key gaps.

HIGHLIGHTS INCLUDE:

- A larger percentage of physicians reported access to electronic health records (EHRs) and ordering systems than reported in the 2008 snapshot. In general, the larger the practice the more likely it uses HIT tools.
- Use of decision support tools, particularly for medication orders, also became more widespread among physicians. In practices where technology is available, the majority of the physicians reported using decision support tools routinely.
- HIT use by hospitals varied widely by type of HIT tool. While nearly 90 percent of California hospitals reported having or being in the process of installing clinical decision support systems, only 40 percent reported having order entry systems installed.
- Community clinics saw tremendous growth in HIT use over the last six years. In 2005, 3 percent of clinics reported having an EHR; in the most recent survey, 47 percent reported having implemented one.

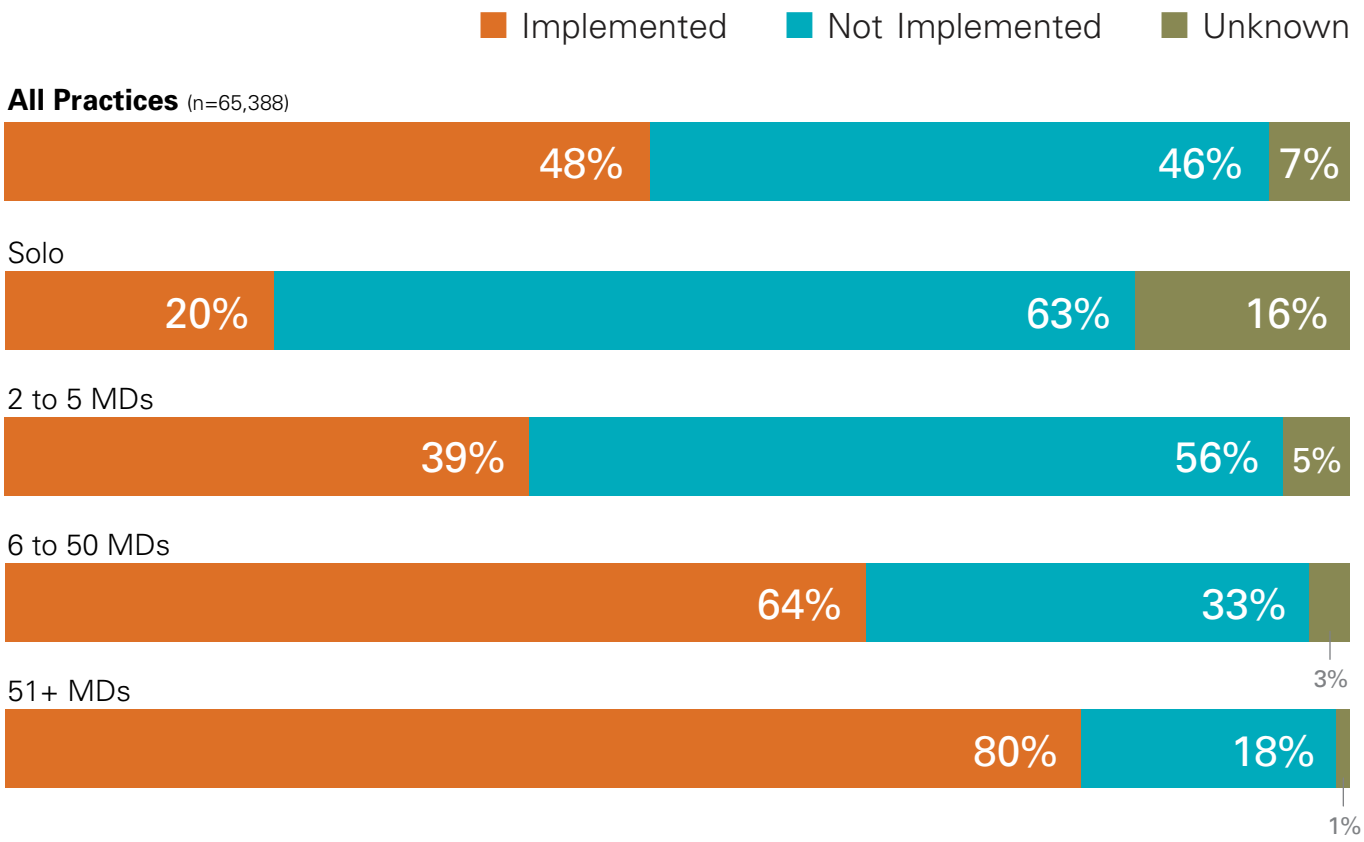
The growth of HIT use among physicians and community clinics in particular is a positive trend that ideally will accelerate with the current influx of federal funding. This financial support is a critical factor in transitioning the California health care system from the early stages of HIT adoption to a phase in which technology is effectively and routinely leveraged to create a safer and more efficient care delivery system.

Note: In some of the following slides, the response percentages do not exactly total 100 percent due to rounding. Percentage results that do not total 100 percent due to the allowance of multiple responses are noted in the text.

CONTENTS

EHR Implementation at Physician Practices,

Overall and by Practice Size

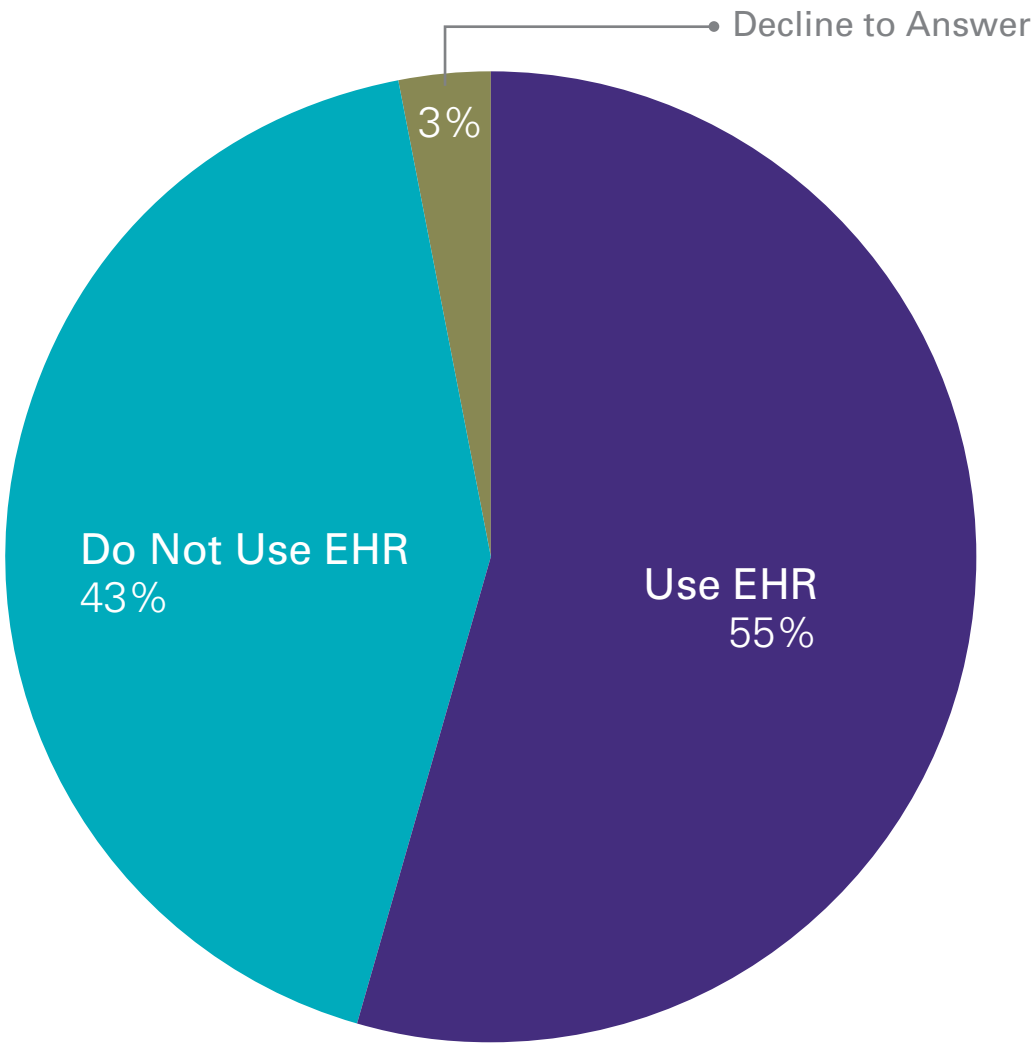


Source: SK&A, 2010.

About half of physician practices have EHRs in place. Larger practices are more likely than small practices and solo practitioners to have implemented EHR software.

EHR Use
by Primary Care Physicians

n=187

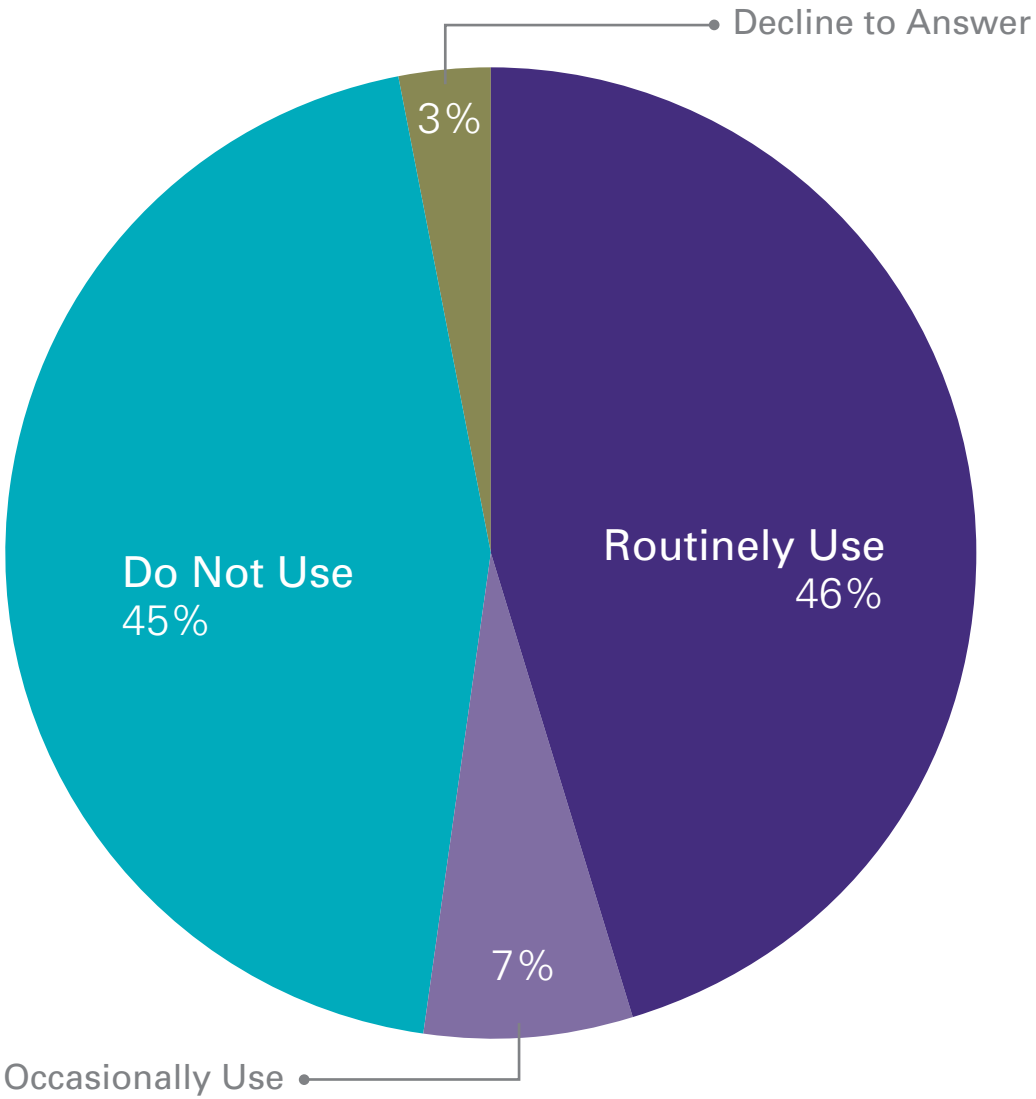


Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Over half of primary care physicians (PCPs) surveyed reported using an EHR in his/her practice.

Use of Electronic Clinical Documentation
by Primary Care Physicians

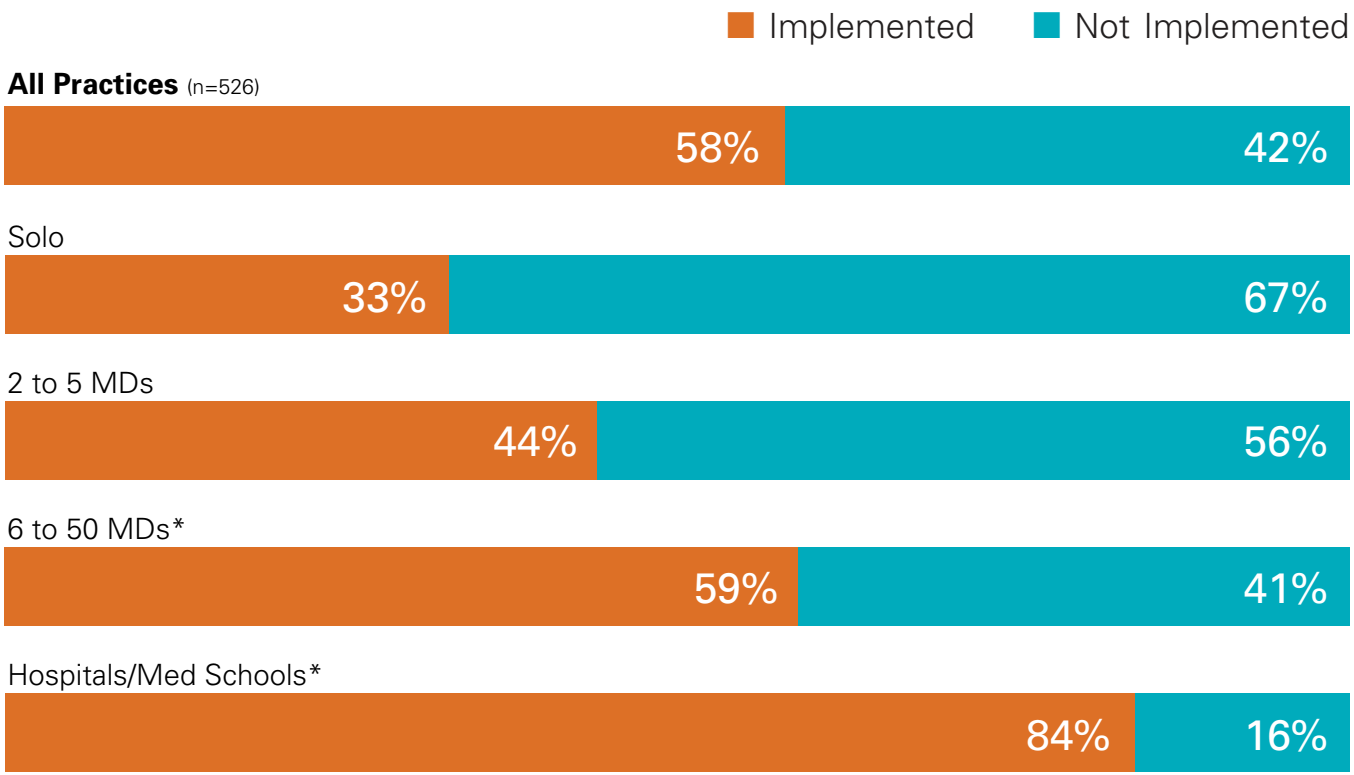
n=187



Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Fifty-three percent of PCPs reported using electronic entry of clinical notes, including medical history and follow-up notes.

Physician Implementation of Technology to Access Clinical Information, Overall and by Practice Category



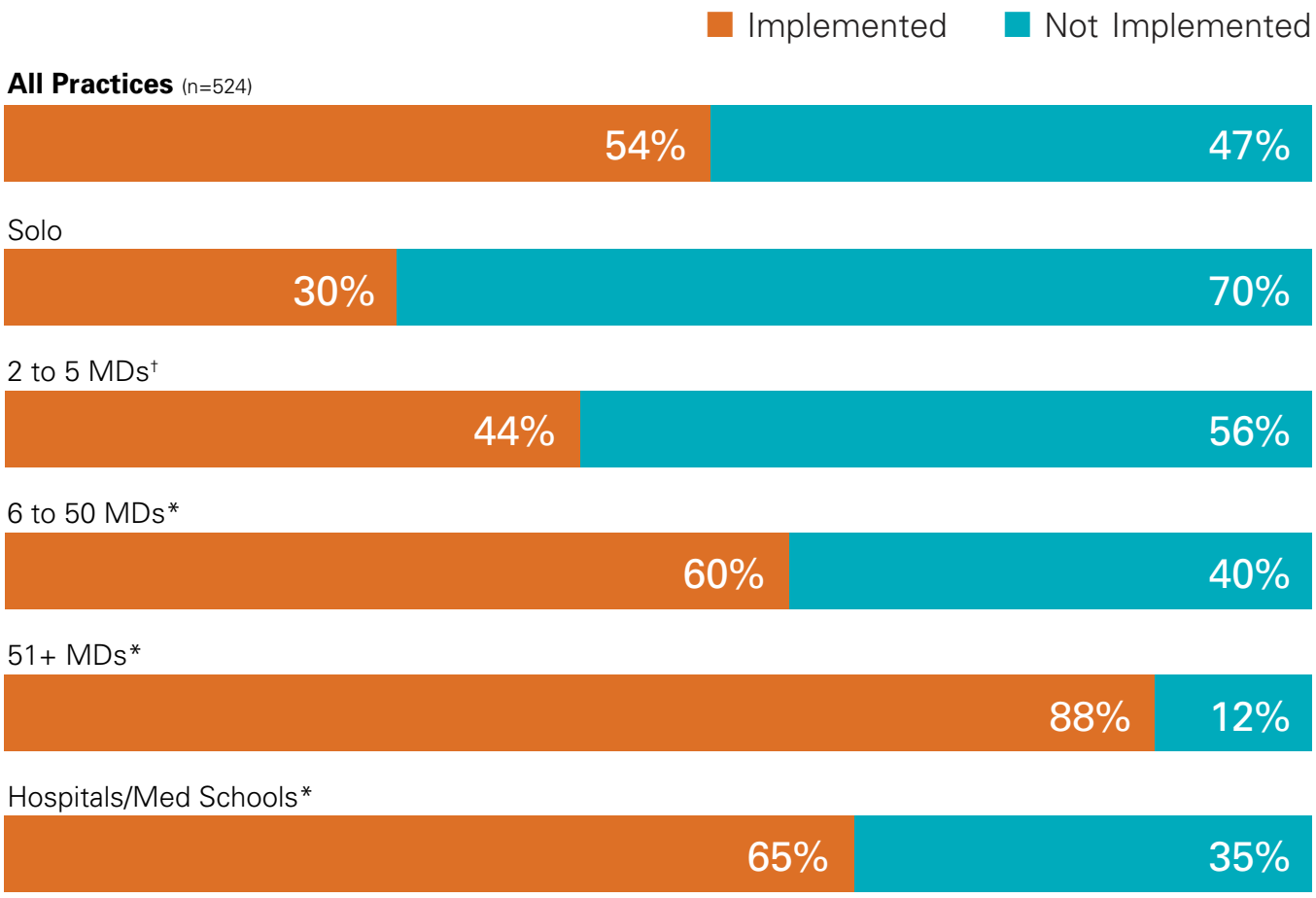
*Difference from "Solo" physicians category is statistically significant at $p<0.01$.

Notes: "Hospitals/Med Schools" includes physicians working in hospital- or medical school-owned office practices; hospital or medical school clinics or emergency rooms; or on hospital staff. Data for practices with 51 or more physicians and an additional category, "Community Health Centers and Other Practice Settings," are not presented because of low sample size. These observations are included in the total "n" listed after "All Practices."

Source: Center for Studying Health System Change, 2008.

Larger practices are more likely than solo practitioners to have implemented technology to access clinical information such as patient notes, medication lists, or problem lists.

Physician Implementation of Electronic Ordering Systems for Clinical Tests, Overall and by Practice Category



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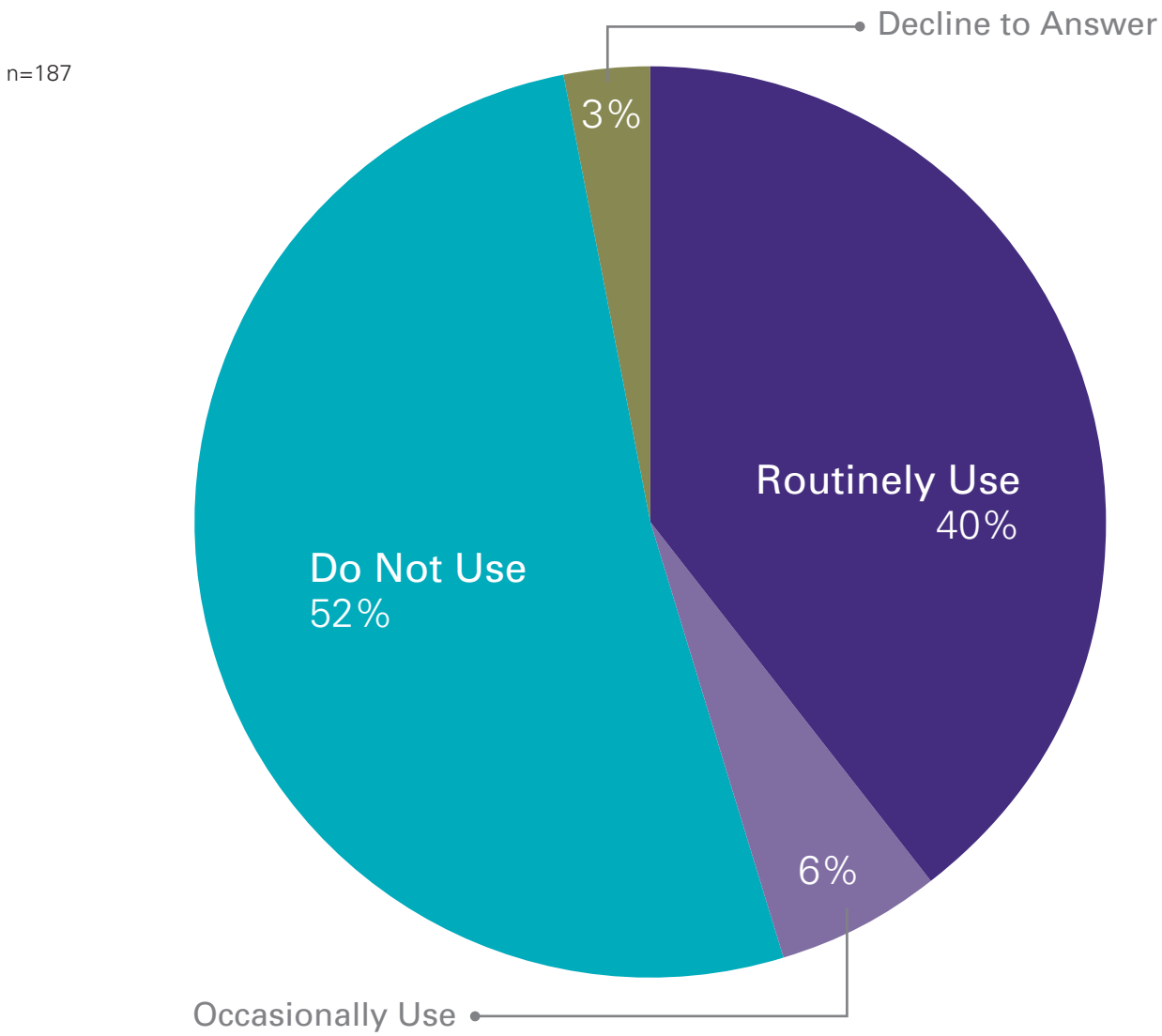
Source: Center for Studying Health System Change, 2008.

Electronic ordering systems for lab, radiology, and diagnostic tests are implemented in 54 percent of physician practices. Implementation varies widely depending on the size of the practice; only 30 percent of solo practices use electronic ordering systems, compared to 88 percent of practices with 51 or more physicians.

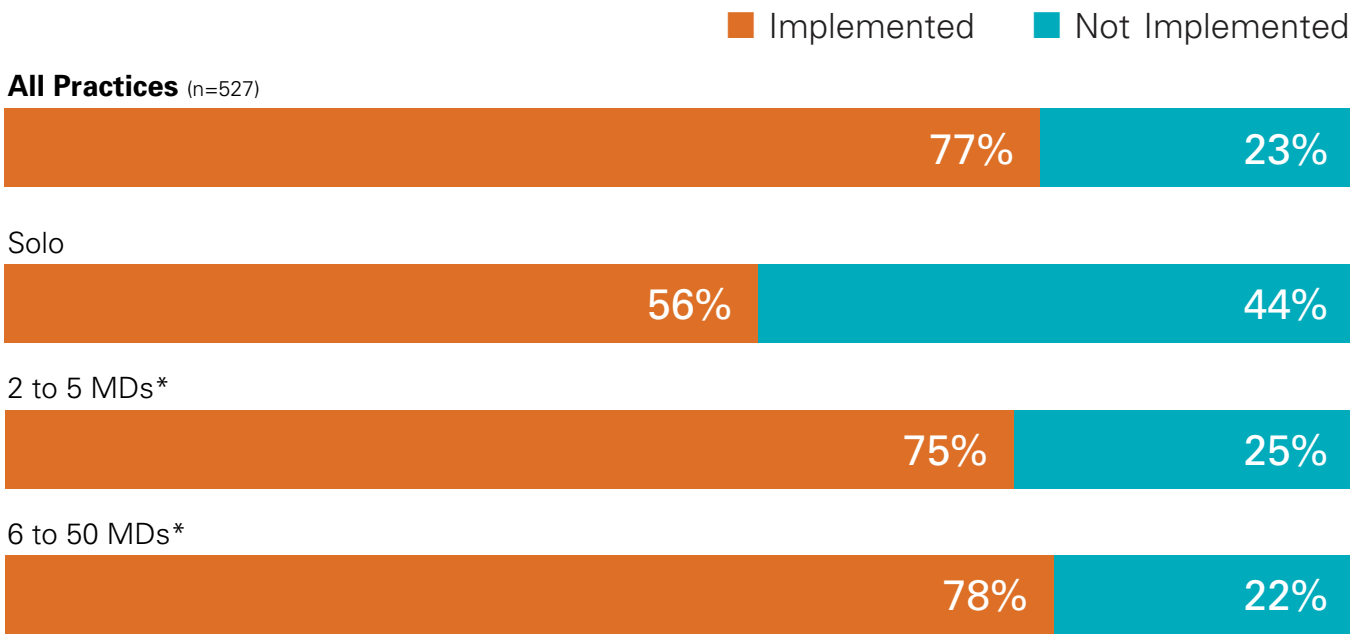
Electronic Ordering of Lab Tests
by Primary Care Physicians



Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

A second survey found 46 percent of PCPs used electronic ordering of lab tests.

Physician Implementation of Technology to View Clinical Results, Overall and by Practice Size



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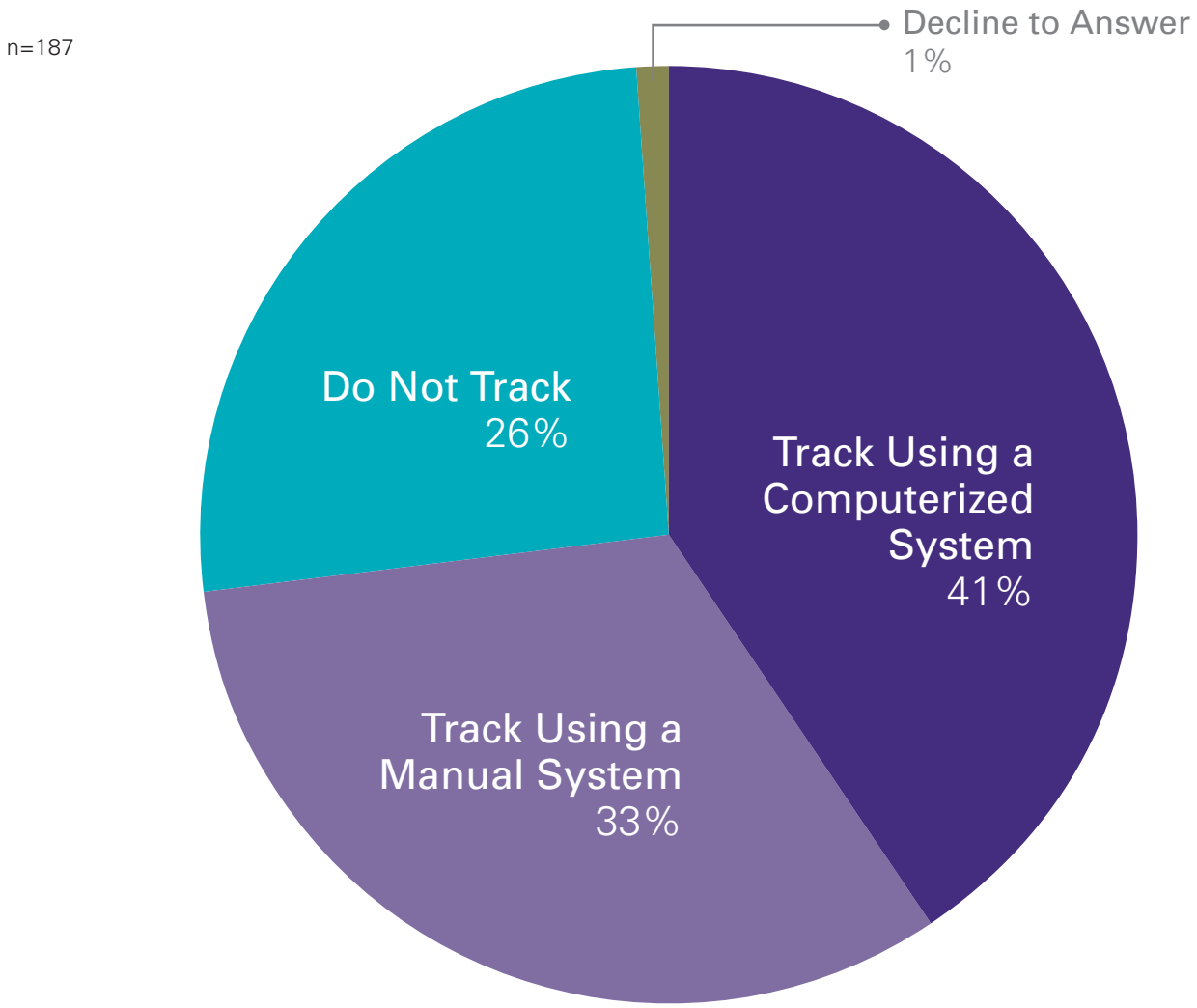
Notes: Data for practices with 51 or more physicians; hospital/med school data; and an additional category, "Community Health Centers and Other Practice Settings," are not presented because of low sample size. These observations are included in the total "n" listed after "All Practices." "Hospitals/Med Schools" includes physicians working in hospital- or medical school-owned office practices; hospital or medical school clinics or emergency rooms; or on hospital staff.

Source: Center for Studying Health System Change, 2008.

Most physician practices have implemented technology to view lab, radiology, and other diagnostic test results.

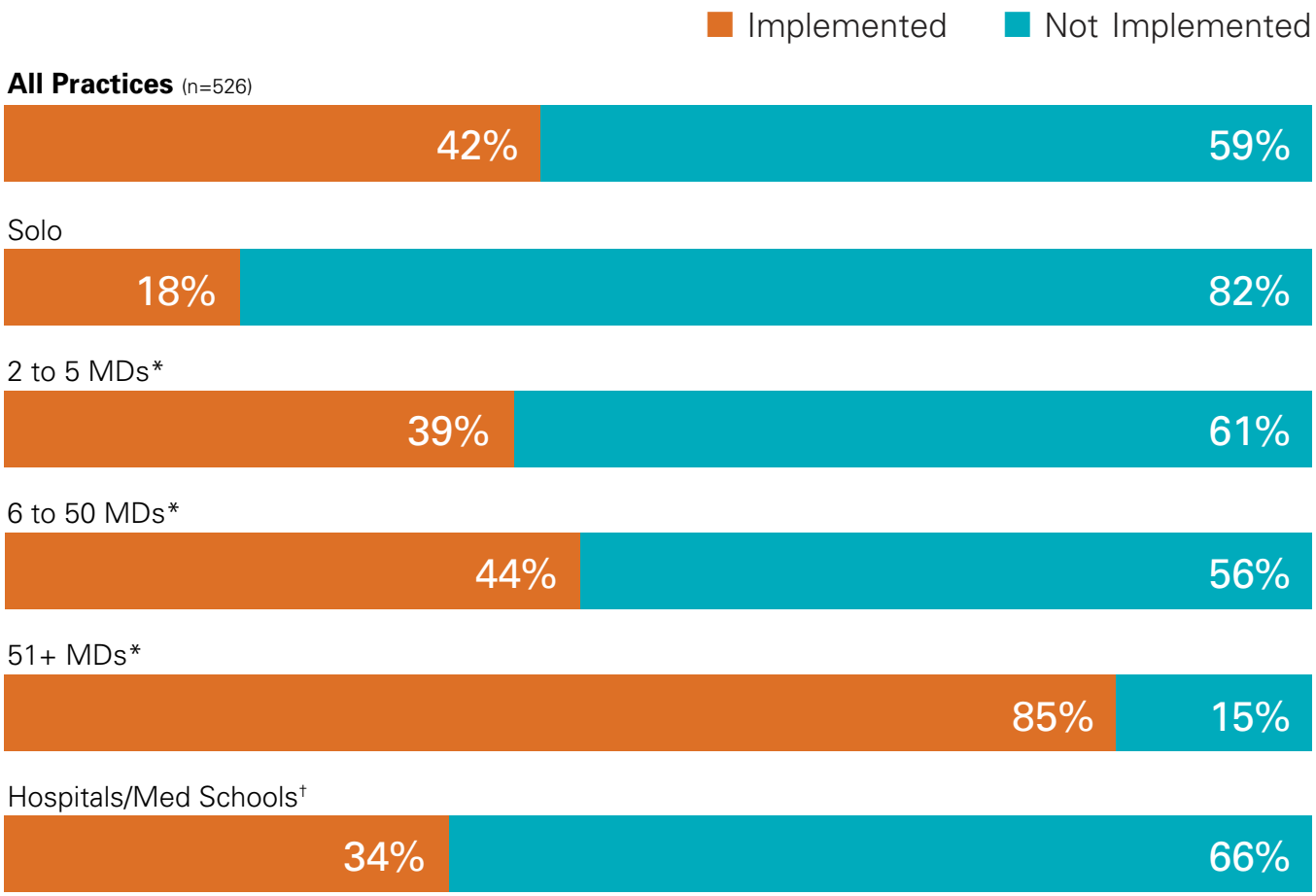
Electronic Tracking of Lab Test Orders
by Primary Care Practices



Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Over a quarter of primary care practices do not track lab orders until results reach clinicians, either electronically or manually.

Physician Implementation of Electronic Prescribing Technology, Overall and by Practice Category



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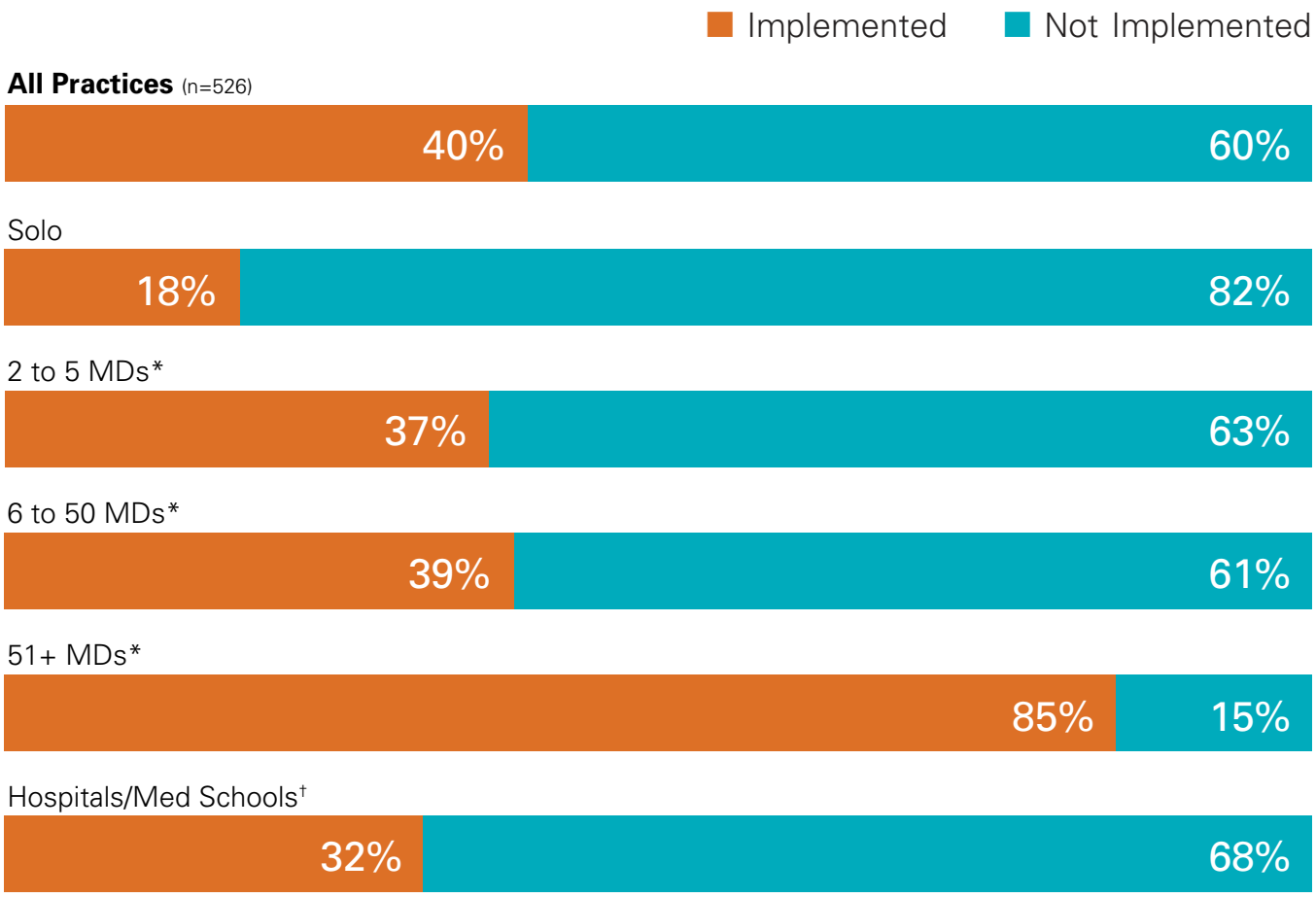
Source: Center for Studying Health System Change, 2008.

Technology for electronic prescribing is implemented in 42 percent of practices. However, only 18 percent of solo practitioners have implemented electronic prescribing technology.

Physician Implementation of Electronic Prescription Transmission Technology, Overall and by Practice Category



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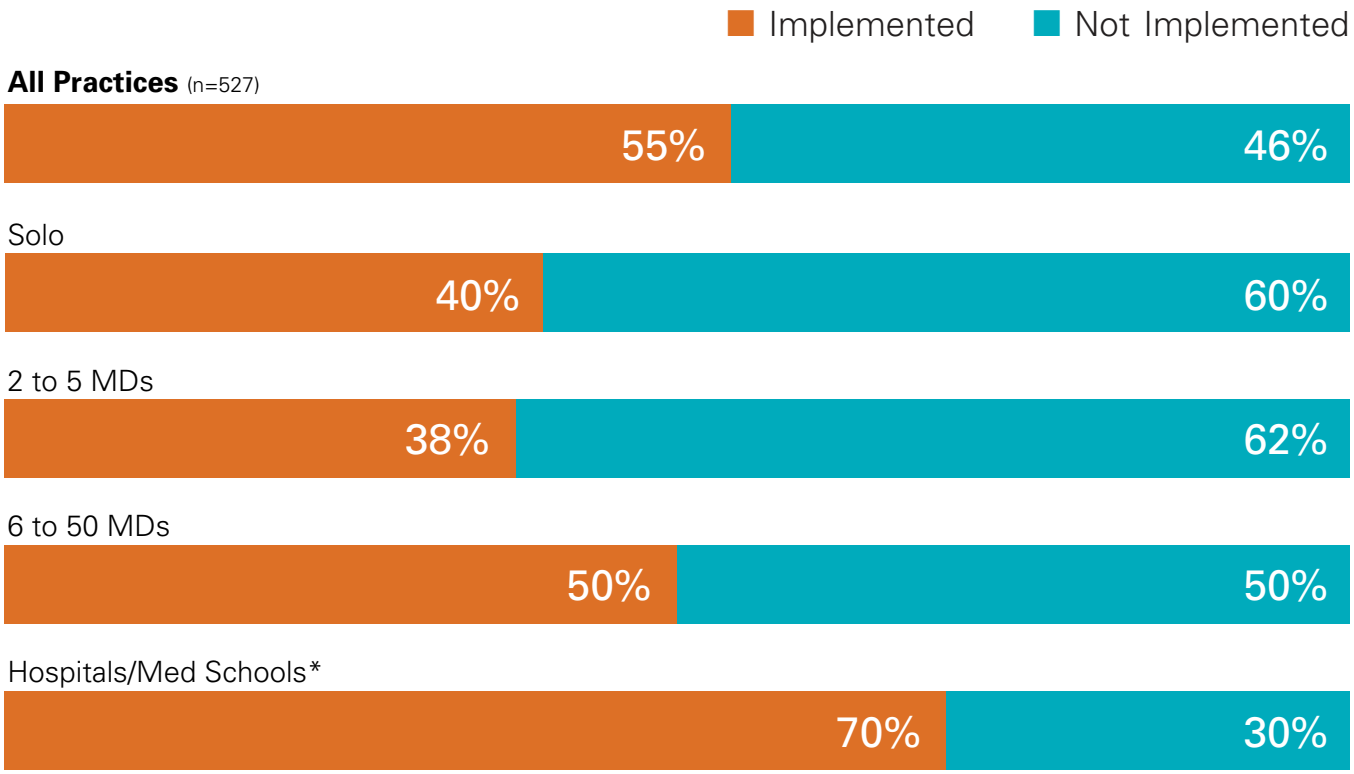
Source: Center for Studying Health System Change, 2008.

Similar to the results reported for electronic prescribing, 40 percent of practices transmit prescriptions to the pharmacy electronically.

Physician Implementation of Technology to Access Electronic Formulary Information,

Overall and by Practice Category



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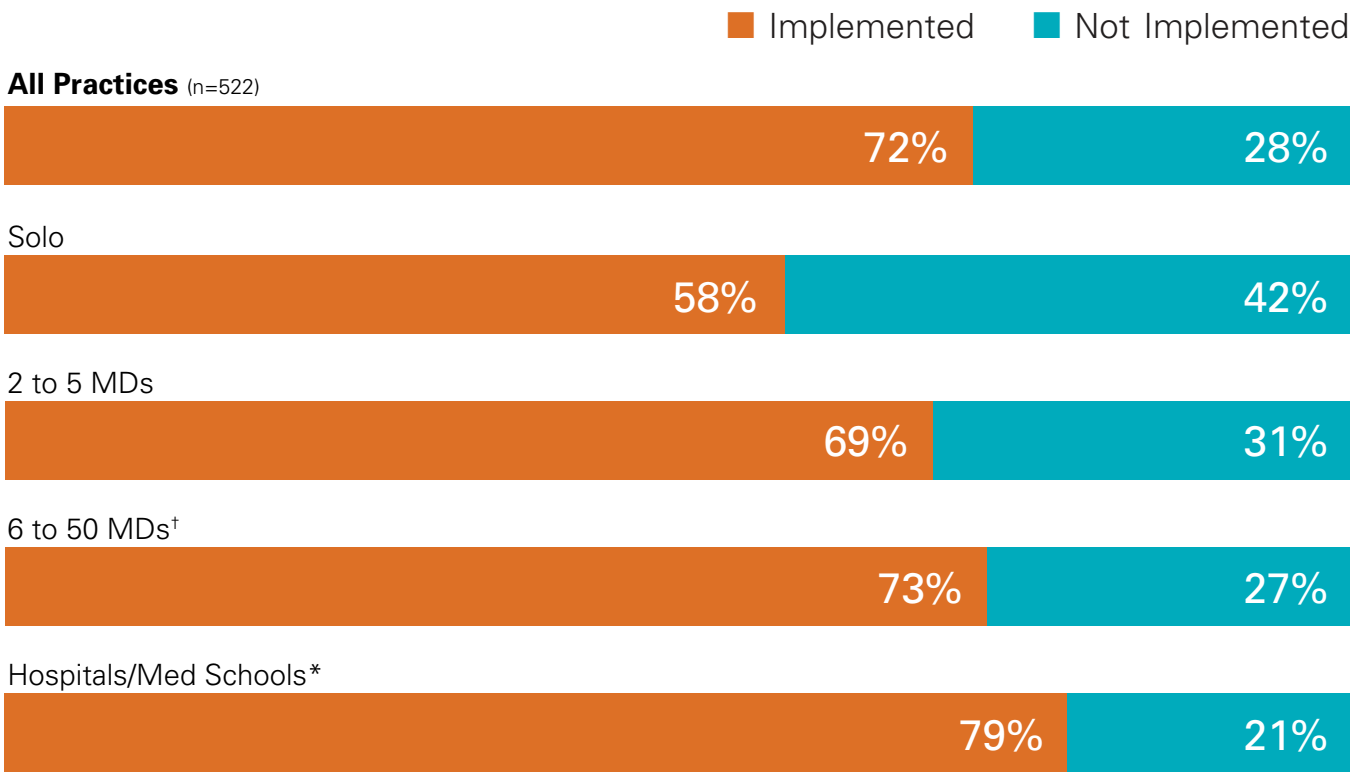
Source: Center for Studying Health System Change, 2008.

While about half of the practices in California have implemented systems to access formulary information electronically, only 50 percent of physicians in those practices routinely use those electronic systems.

Physician Implementation of Decision Support Tools,
Overall and by Practice Category



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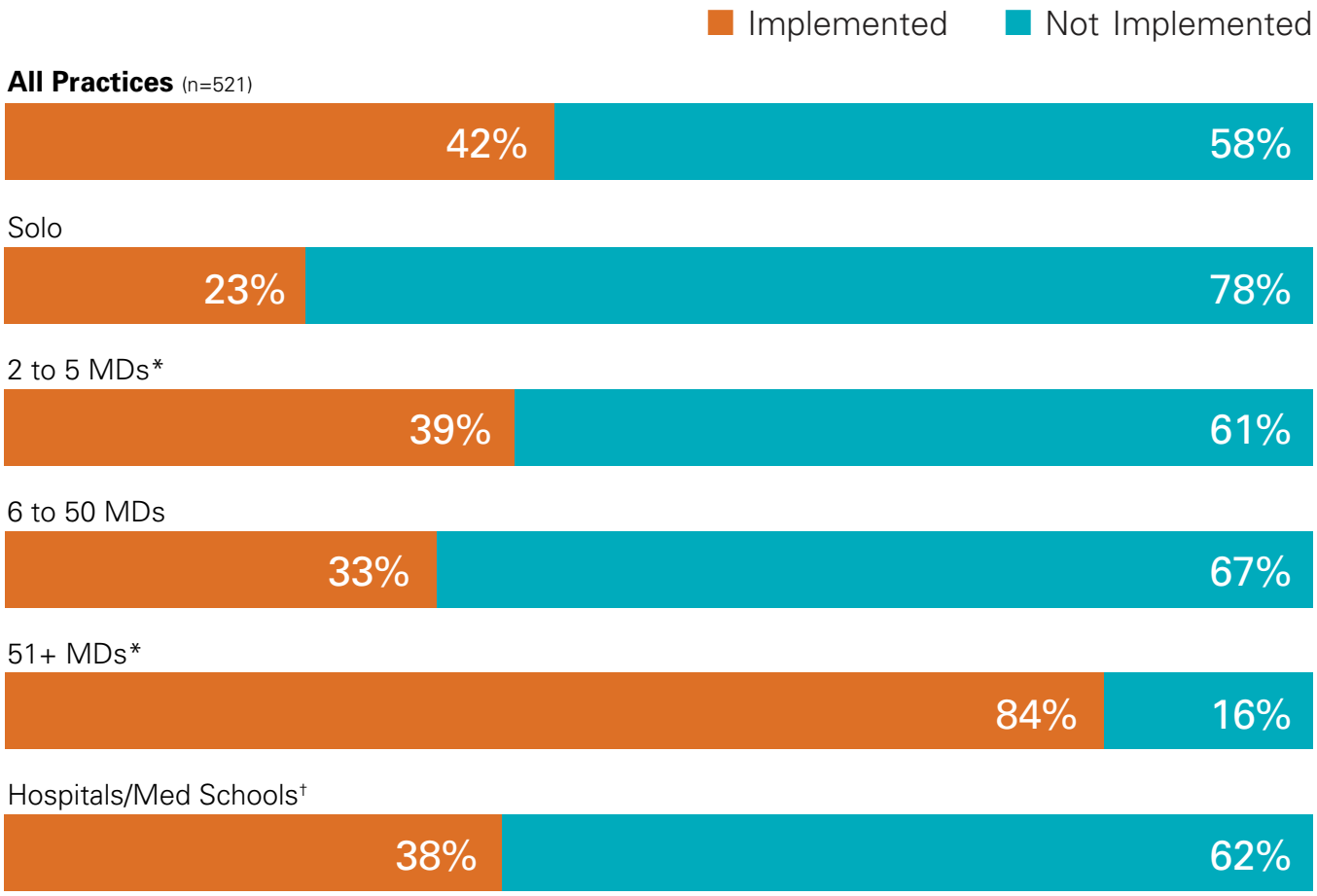
Source: Center for Studying Health System Change, 2008.

Decision support tools for diagnostic and treatment recommendations have been widely implemented, with 72 percent of practices reporting having these tools.

Physician Implementation of Automated Reminder Systems for Preventive Services,

Overall and by Practice Category



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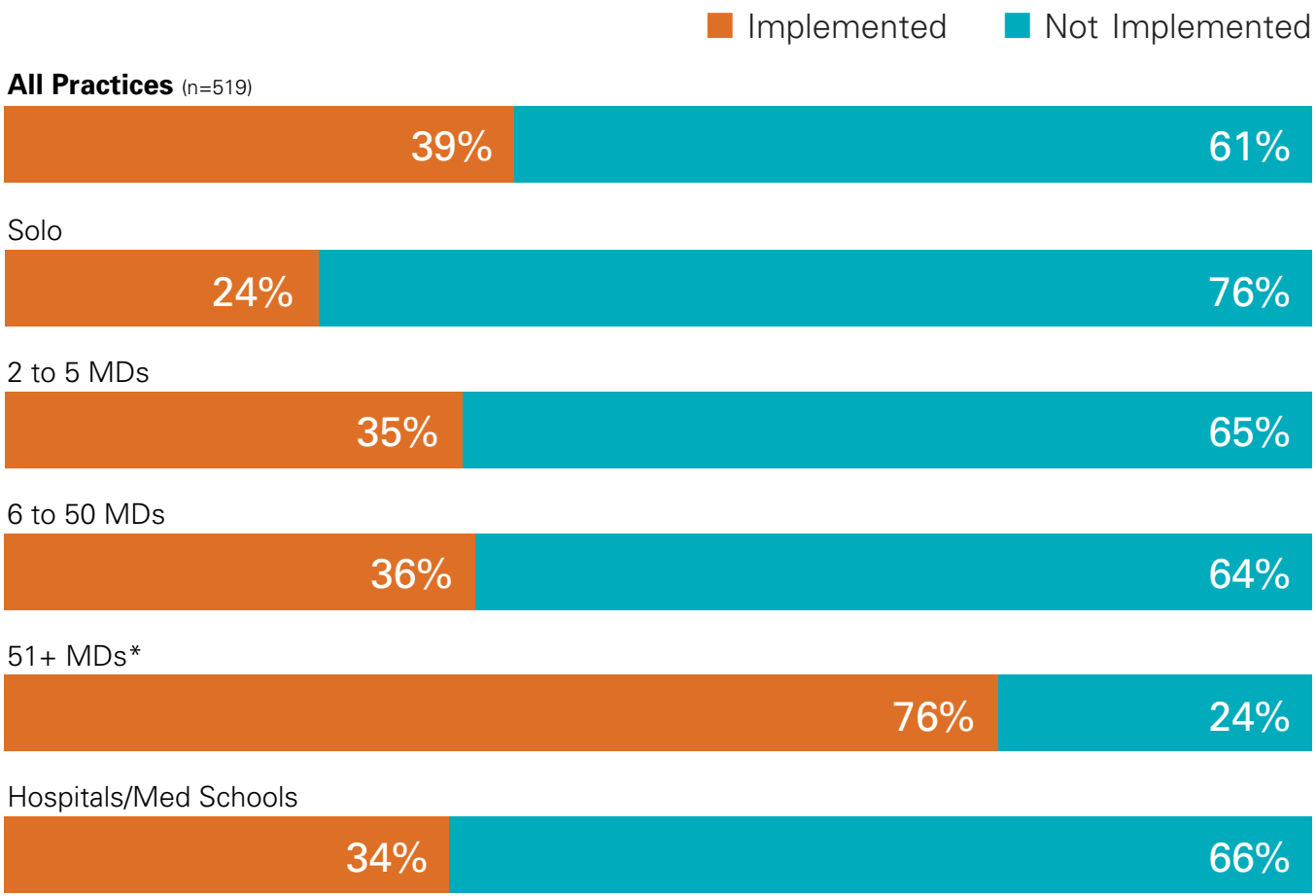
Source: Center for Studying Health System Change, 2008.

Large practices of more than 51 physicians use technology to generate reminders for clinicians about preventive services more frequently than smaller practices and solo practitioners.

Physician Implementation of Automated Reminder Systems for Other Patient Follow-Up,

Overall and by Practice Category



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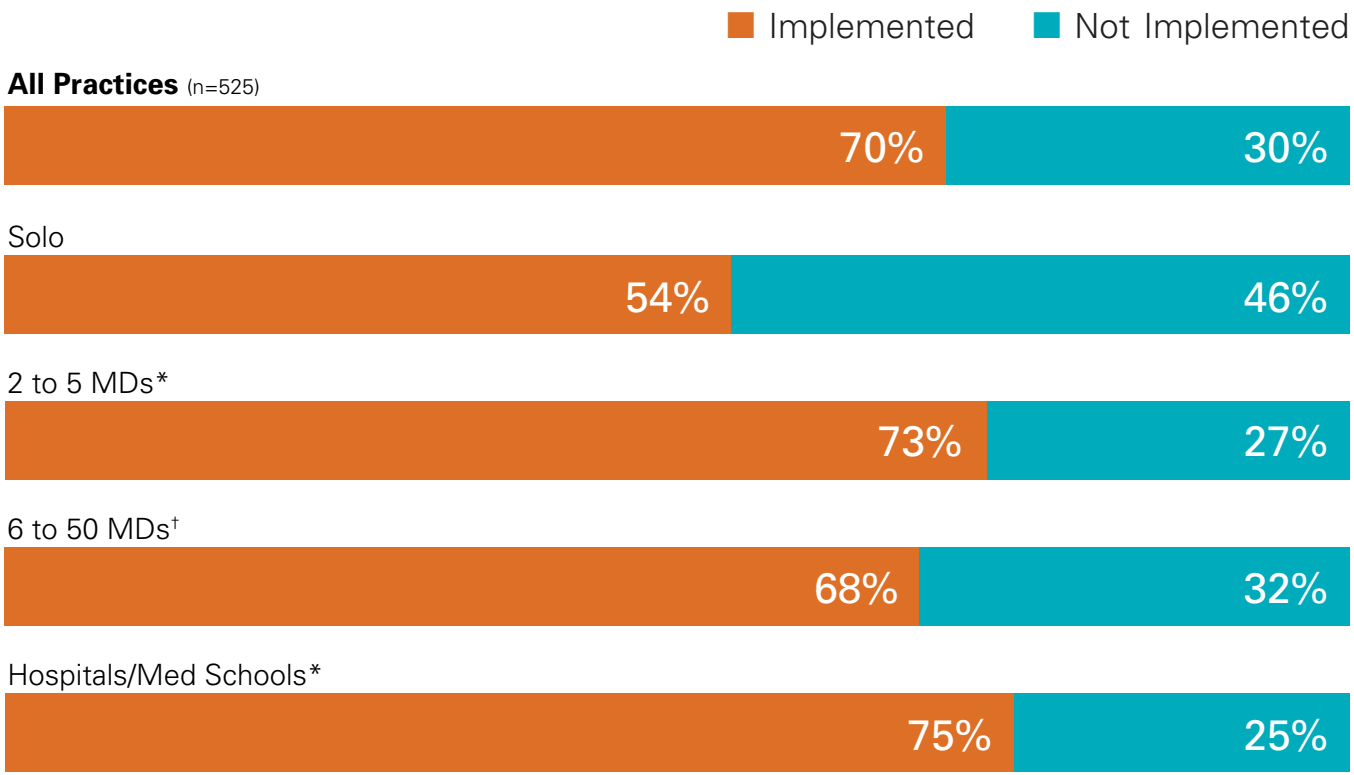
Source: Center for Studying Health System Change, 2008.

Thirty-nine percent of practices have implemented automated systems to generate patient follow-up reminders for clinicians.

Physician Implementation of Decision Support Tools for Medication Orders, Overall and by Practice Category



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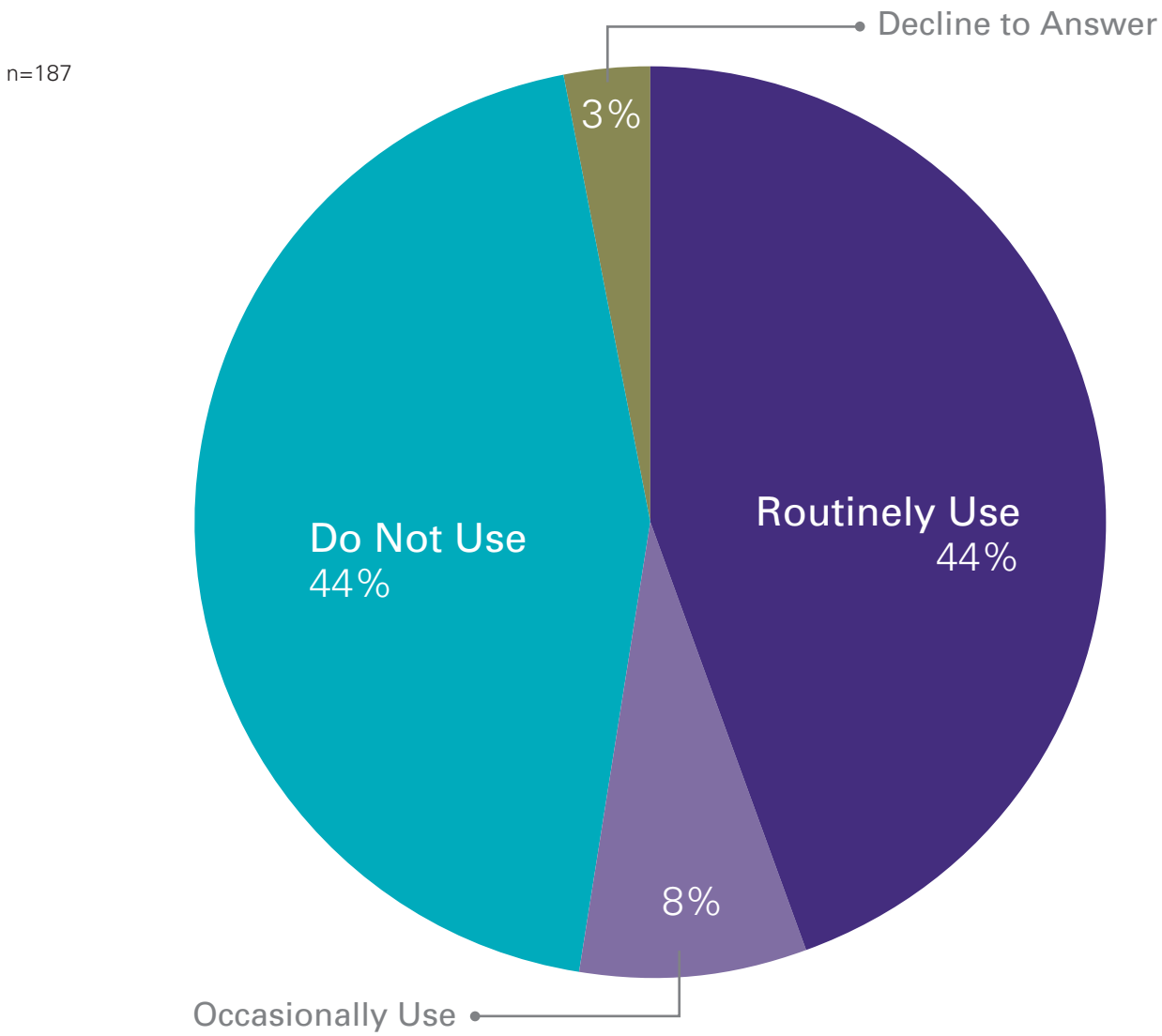
Source: Center for Studying Health System Change, 2008.

Seventy percent of practices have implemented decision support tools to obtain information on potential patient drug interactions with other drugs, drug allergies, and/or other patient conditions, in order to reduce medication errors.

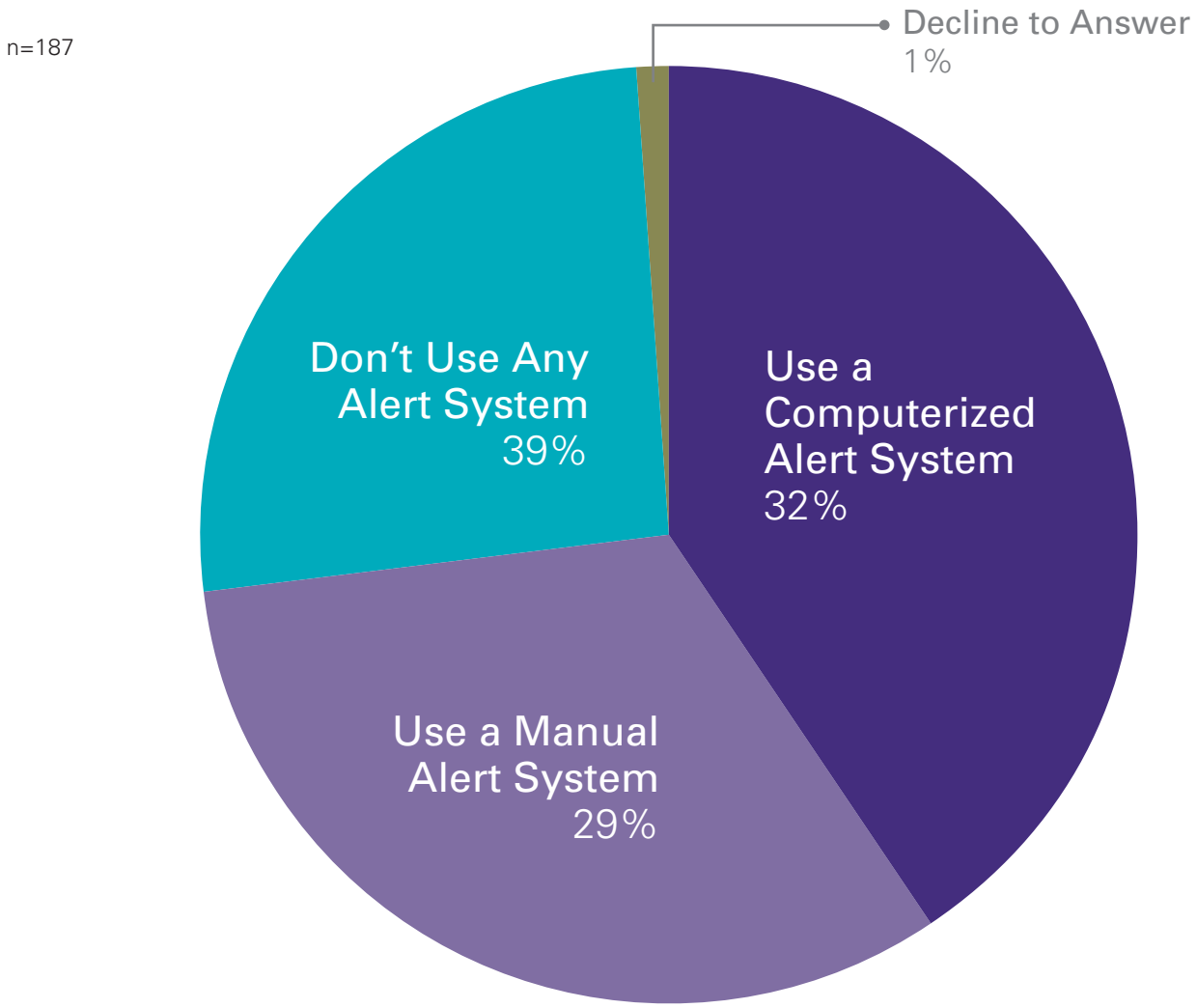
Use of Decision Support Tools for Medication Orders
by Primary Care Physicians



Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

A second survey of PCPs found that use of decision support tools for drug dose and drug interaction warnings was slightly less prevalent, with 52 percent of practices using these types of electronic alerts.

Use of Automated Alerts to Provide Patients With Test Results by Primary Care Physicians

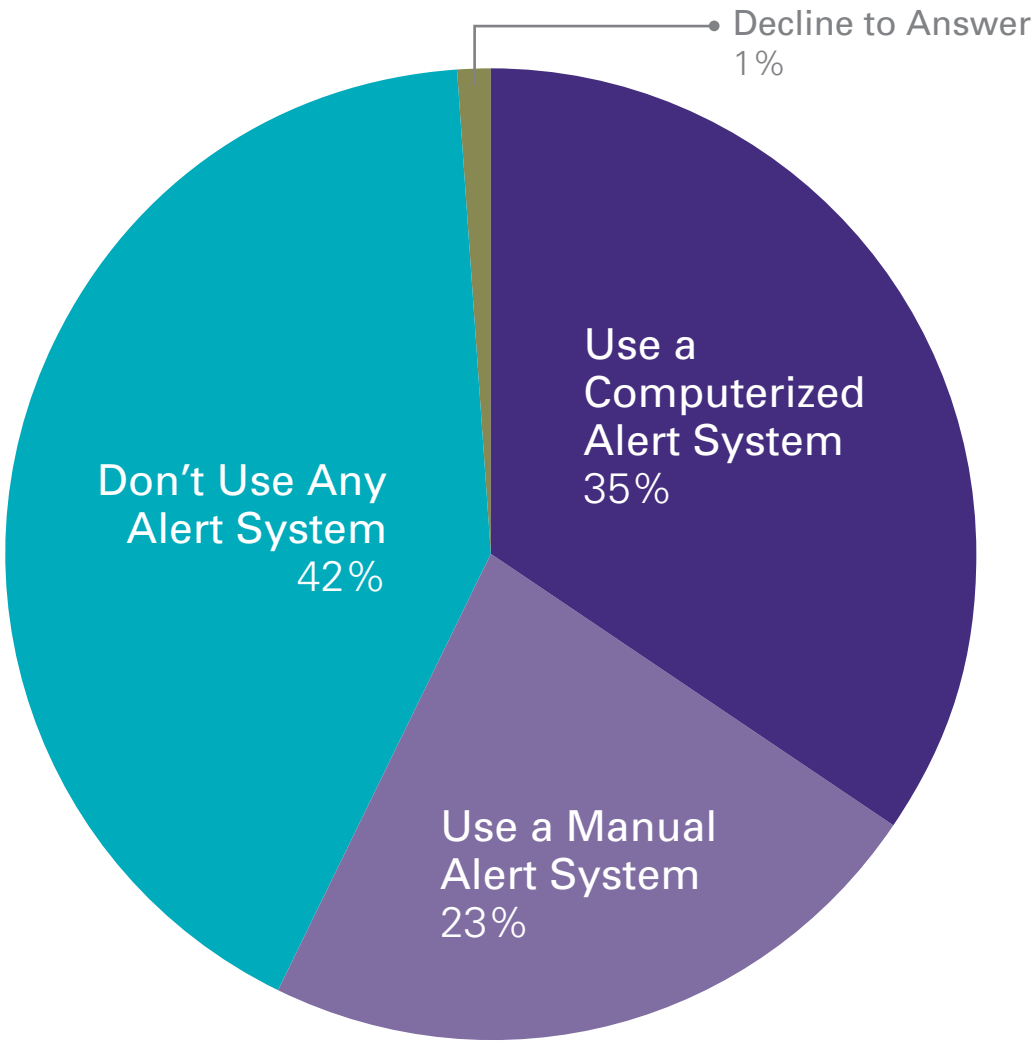


Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Thirty-two percent of PCPs receive computerized alerts to provide patients with test results, while 29 percent of physicians rely on a manual system.

Use of Guideline-based Alerts for Interventions and Tests
by Primary Care Physicians

n=187

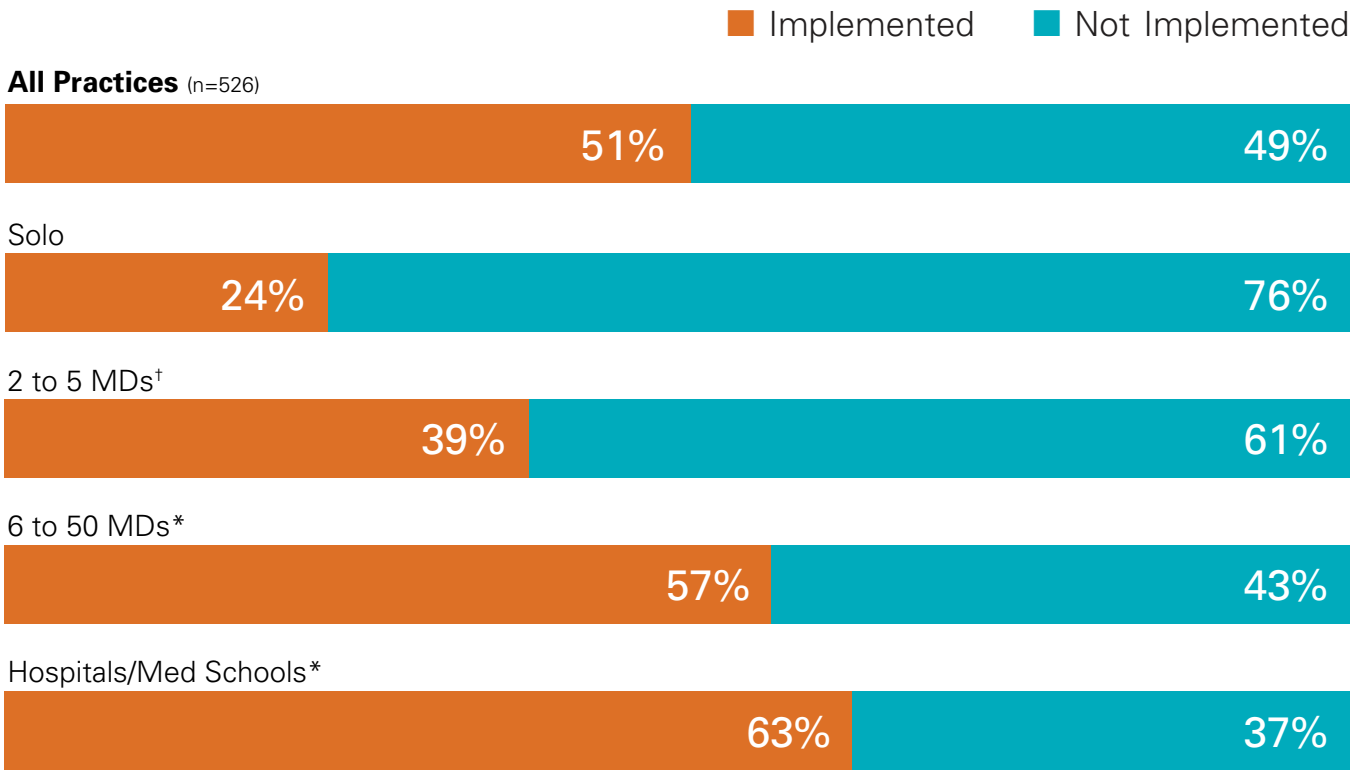


Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Thirty-five percent of PCPs surveyed receive computerized reminders to increase compliance with guidelines.

Physician Implementation of Electronic Clinical Data Exchange Systems with Other Physicians,

Overall and by Practice Category



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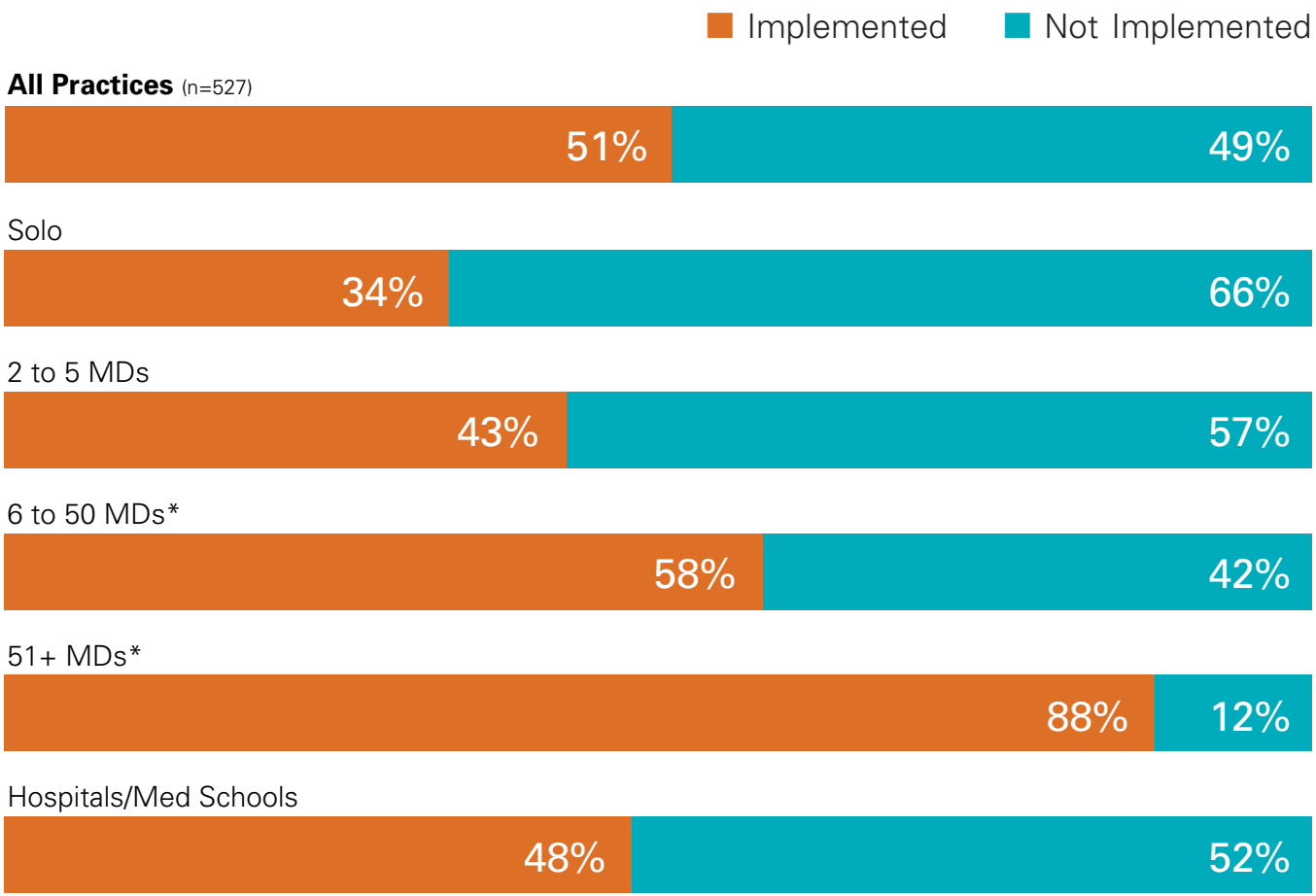
Source: Center for Studying Health System Change, 2008.

A little over half of physicians surveyed reported having implemented technology to exchange clinical data electronically with other physicians.

Physician Implementation of Electronic Clinical Data Exchange Systems With Hospitals and Laboratories,

Overall and by Practice Category



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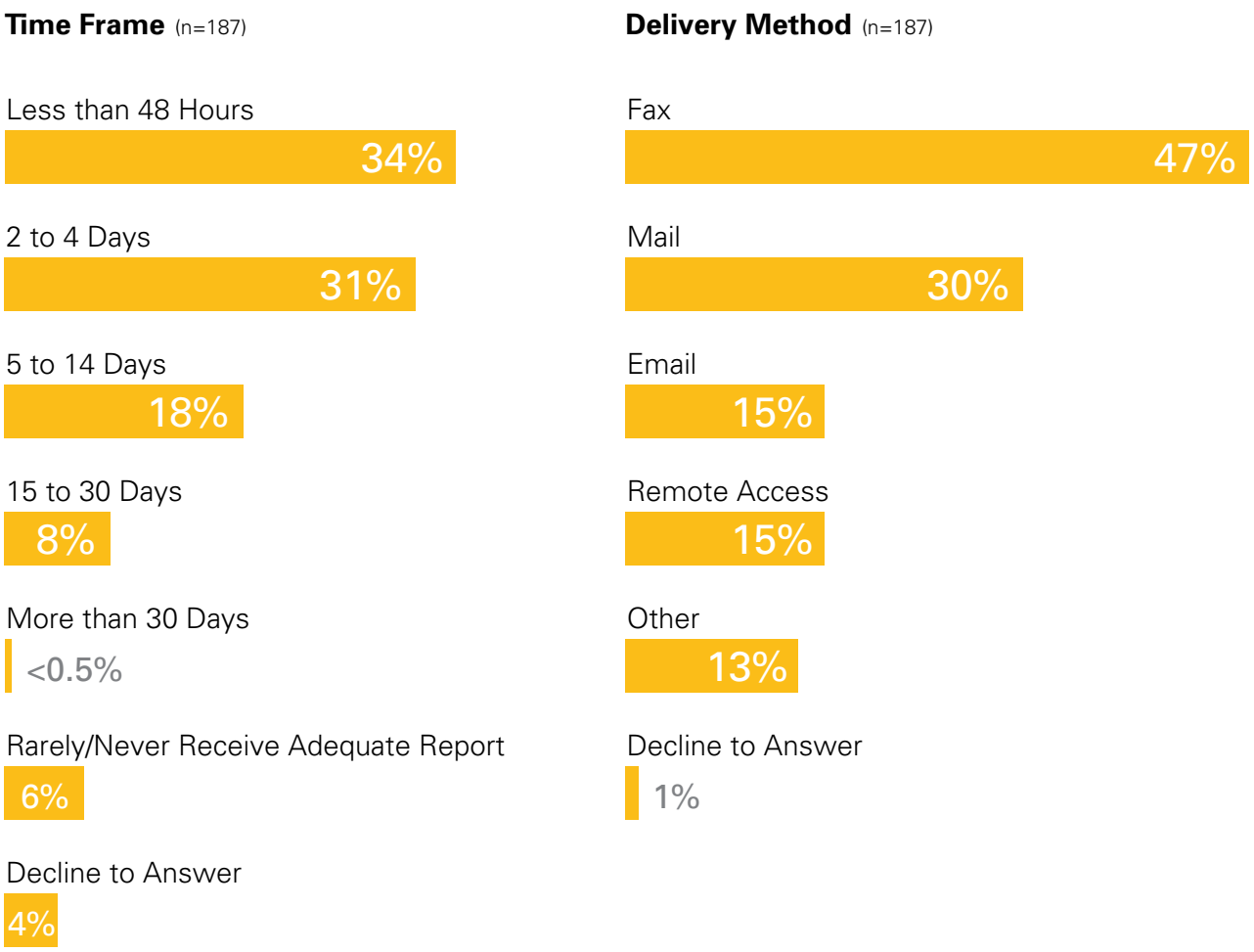
Source: Center for Studying Health System Change, 2008.

Large practices (those with 51 or more physicians) are especially likely to use electronic systems to exchange clinical data with hospitals and laboratories.

Receipt of Discharge Information
by Primary Care Physicians

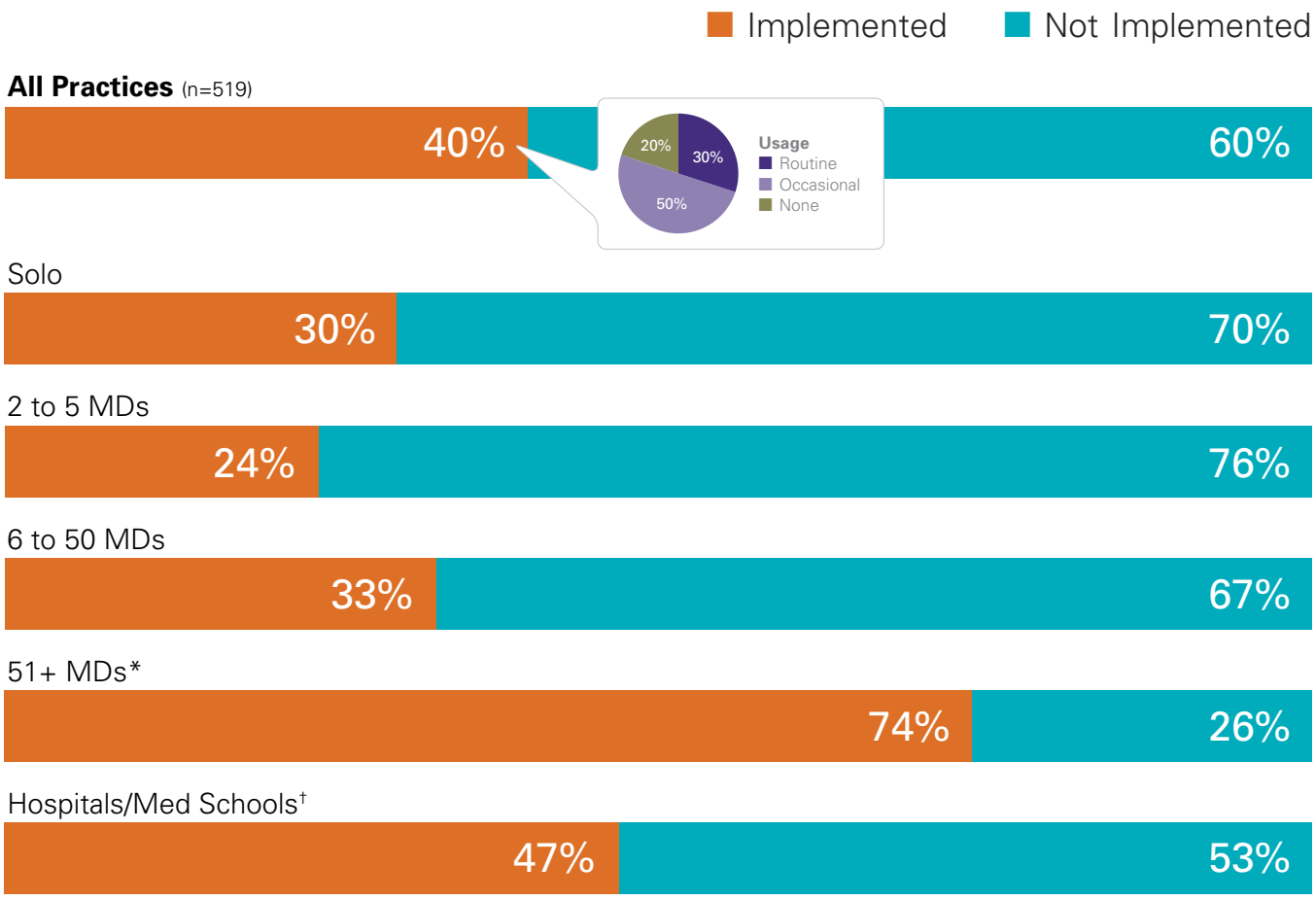


Note: Respondents may choose more than one response.

Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

Only 34 percent of PCPs receive discharge information on their patients within 48 hours of discharge, including information on recommended follow-up care and other information they need to continue managing the patient. Seventy-seven percent of physicians receive this information via fax or mail.

Physician Implementation of Email To/From Patients About Clinical Issues, Overall and by Practice Category



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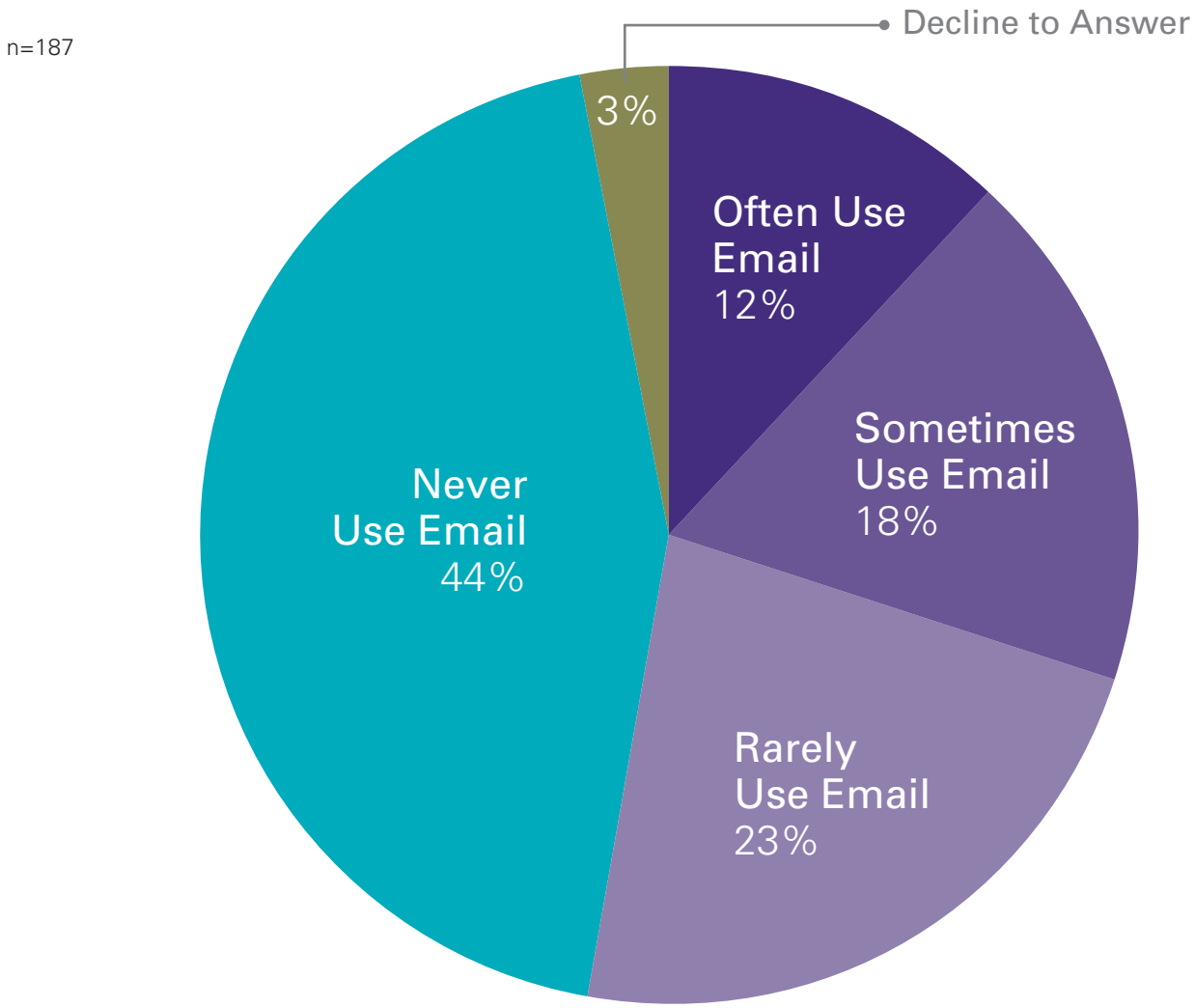
Source: Center for Studying Health System Change, 2008.

While 40 percent of practices have implemented systems that allow physicians to communicate with patients via email, only 30 percent of physicians in those practices are routinely doing so.

Use of Email To/From Patients About Clinical or Administrative Issues by Primary Care Physicians

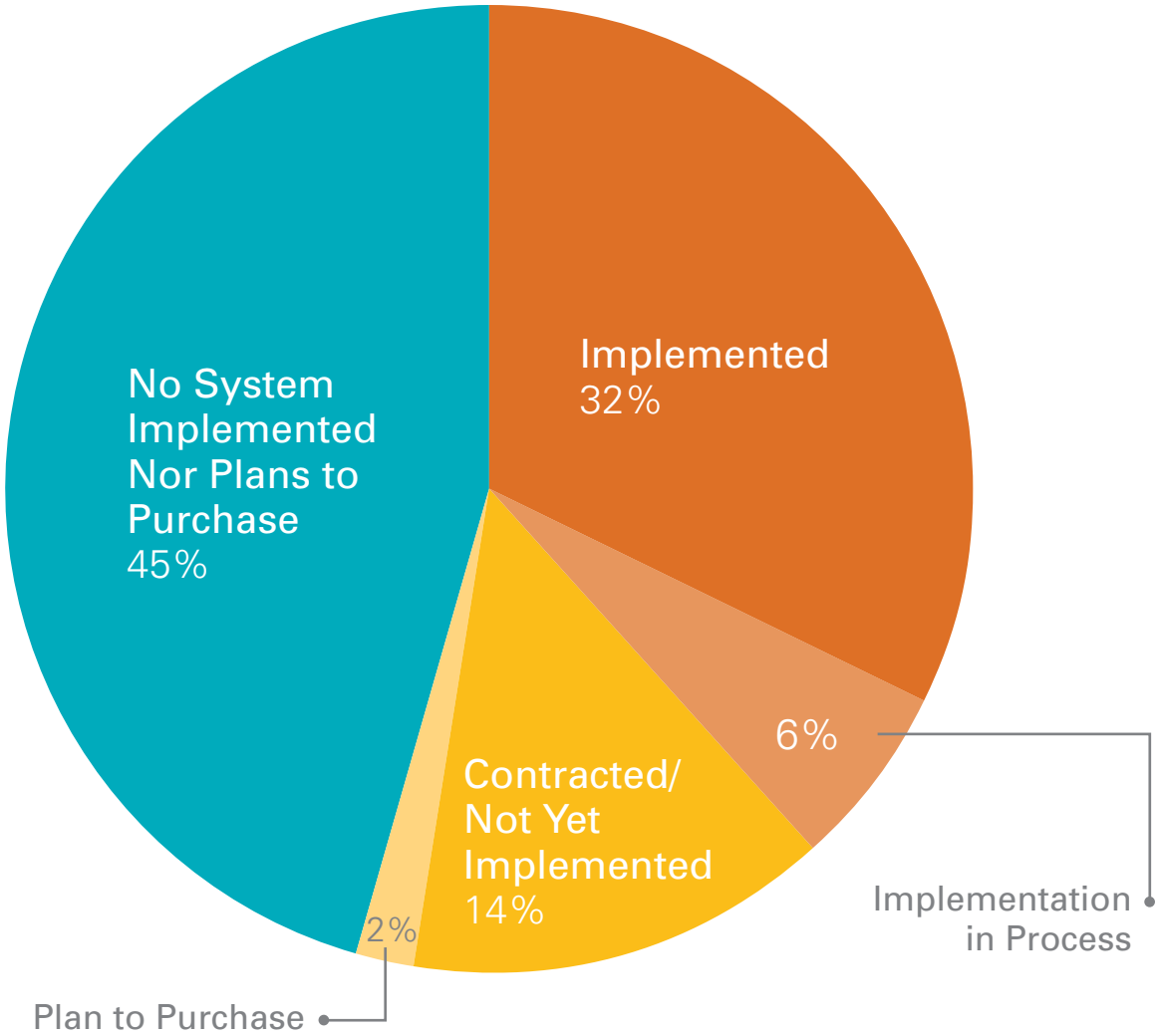


Source: Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2009.

A second survey found a similar level of penetration of email technology, with 44 percent of PCPs never emailing with patients for either clinical or administrative purposes.

Implementation of Electronic Clinical Documentation Systems at Hospitals

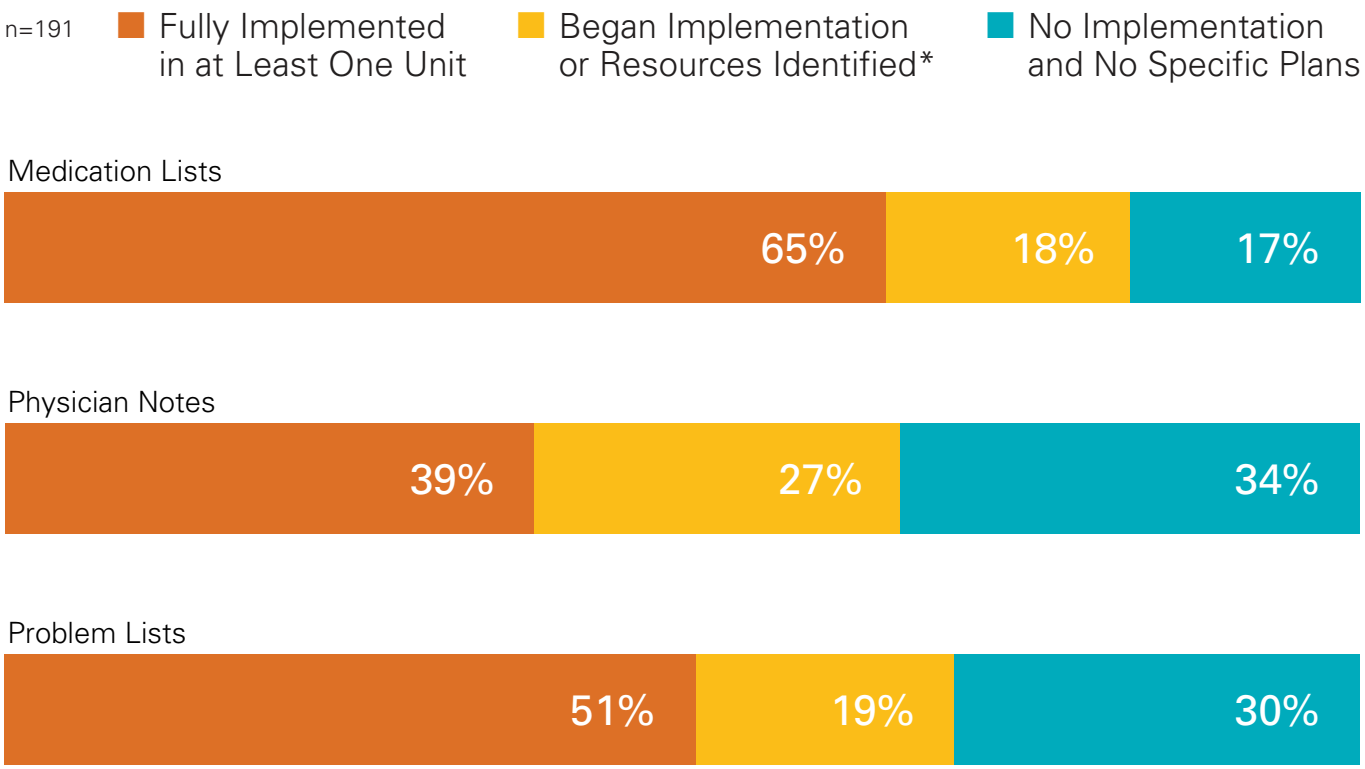
n=386



Source: HIMSS Analytics™ Database, 2010.

Thirty-two percent of hospitals currently have an electronic clinical documentation system in place. An additional 25 percent are in the process of implementing one or contracting to have one built.

Prevalence of Electronic Clinical Documentation Functions at Hospitals

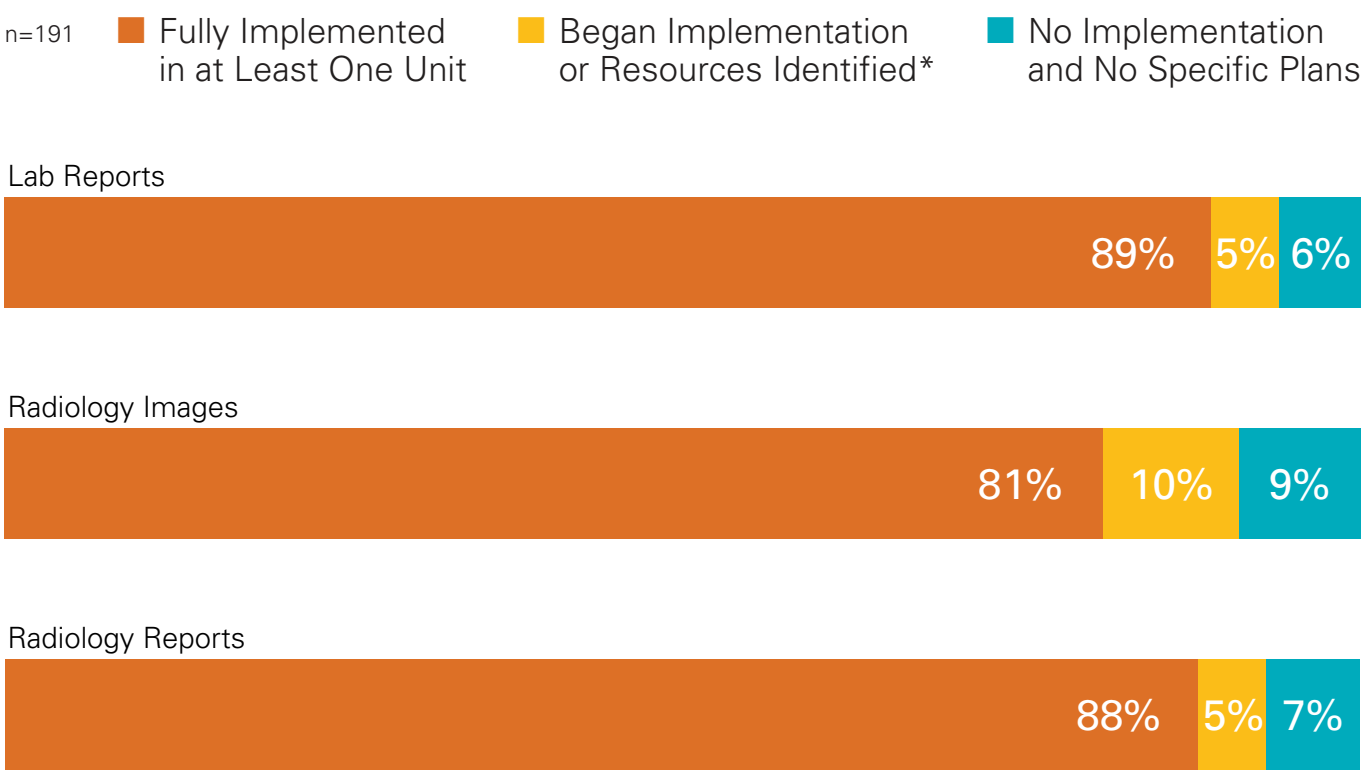


*Those who reported that they were either "beginning to implement in at least one unit" or "have resources identified to implement in the next year."

Source: Authors' (Jha et al.) analyses of data from the 2008 AHA Annual HIT Supplement of Acute Care Hospitals in the U.S.

Of the various clinical documentation functions, medication lists are most commonly implemented, with 65 percent of hospitals having fully implemented medication lists in at least one unit.

Prevalence of EHR Functions at Hospitals



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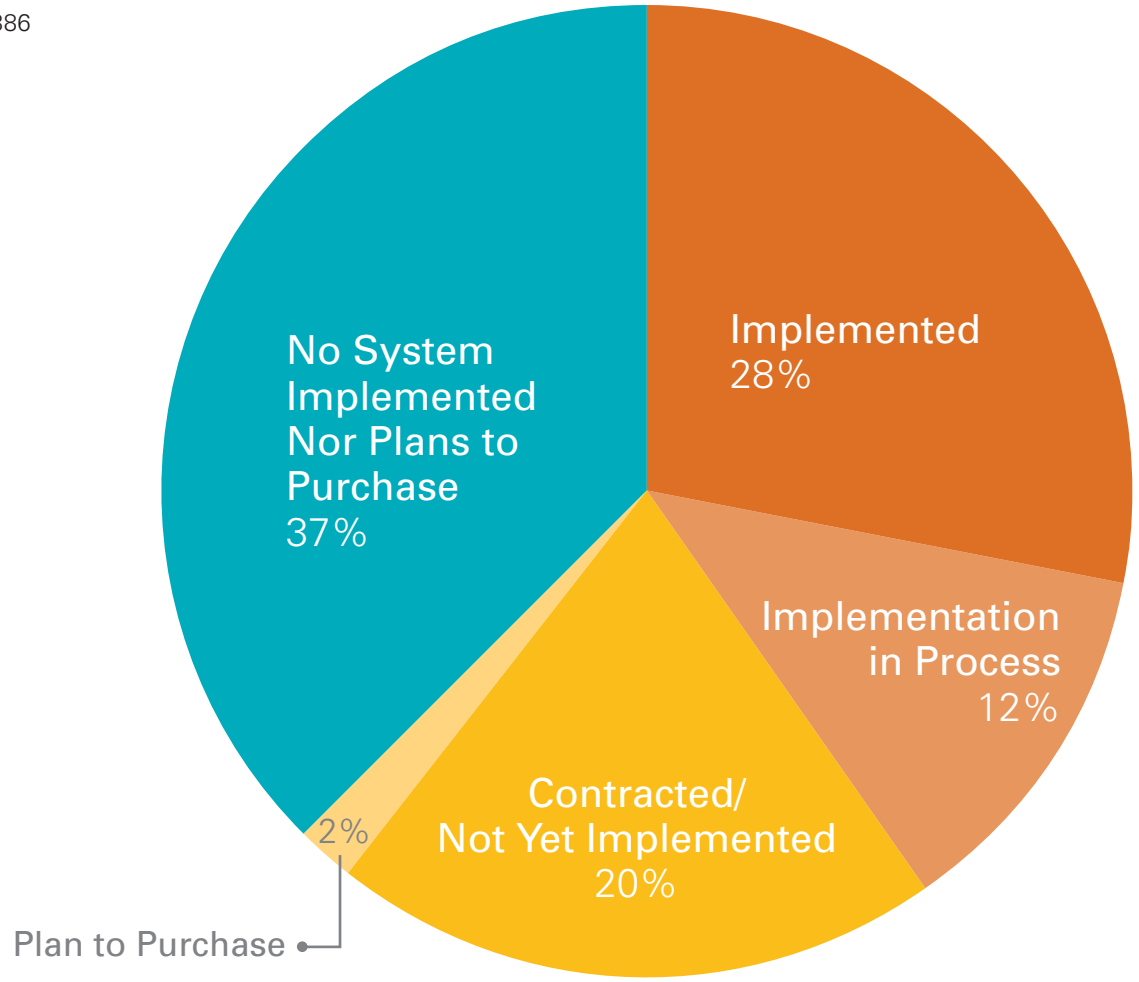
Source: Authors' (Jha et al.) analyses of data from the 2008 AHA Annual HIT Supplement of Acute Care Hospitals in the U.S.

Lab reporting is the most commonly implemented EHR function, with nearly 90 percent of hospitals reporting it is fully implemented in at least one unit.

Implementation of Computerized Order Entry Systems at Hospitals

n=386

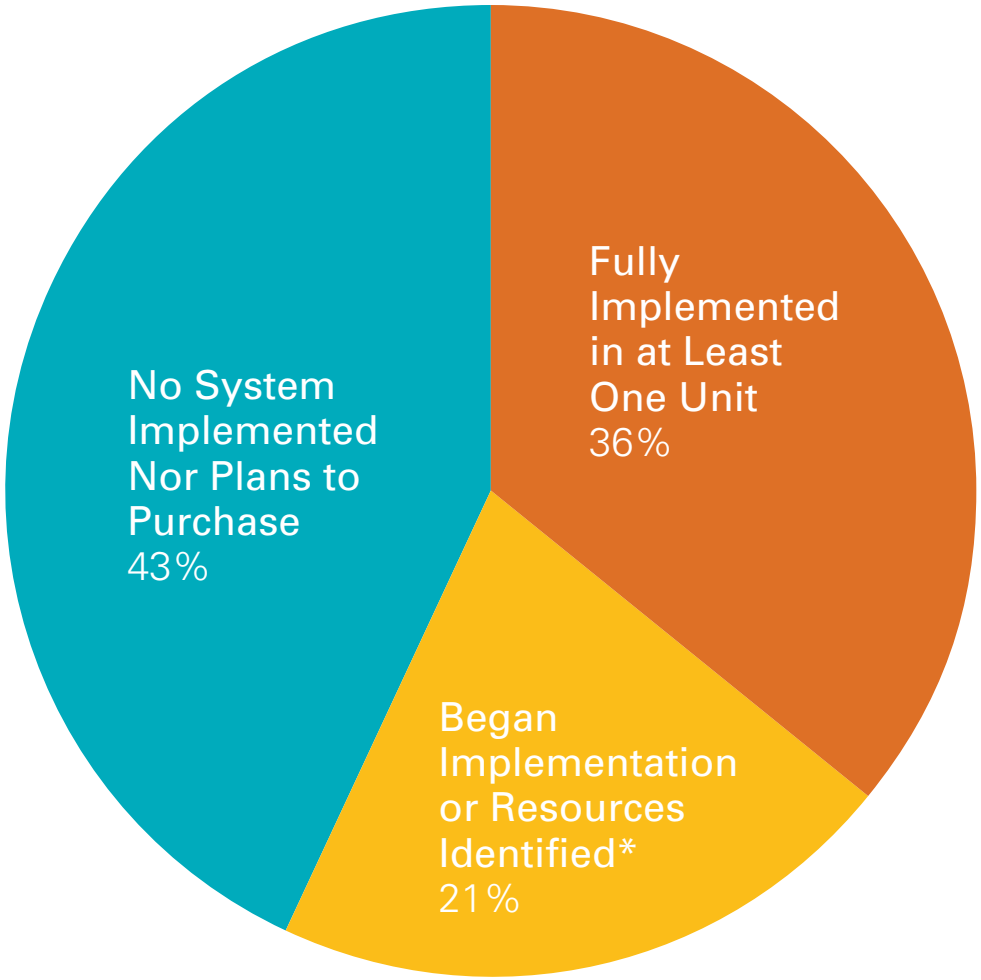


Source: HIMSS Analytics™ Database, 2010.

Forty percent of hospitals have a computerized order entry system currently installed or are in the process of installing one.

Implementation of Computerized Order Entry Systems for Medications at Hospitals

n=191



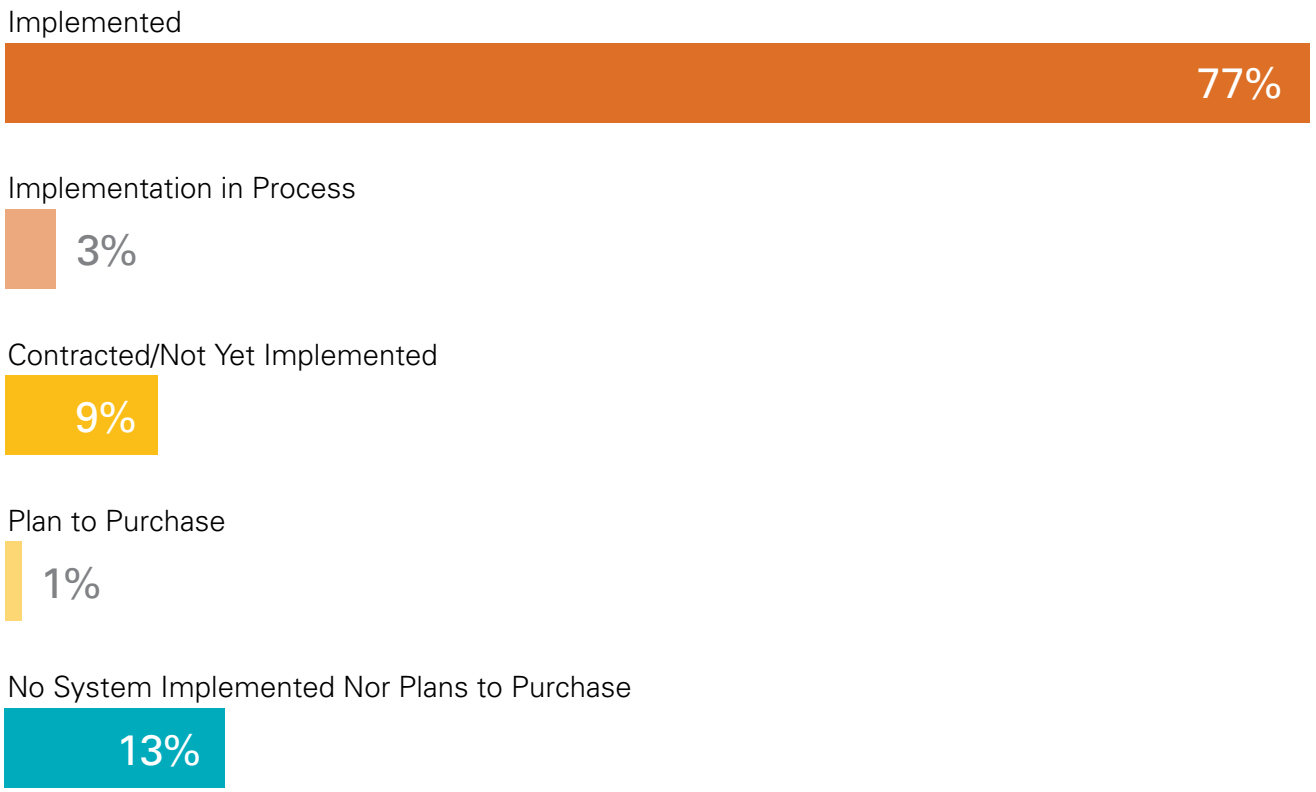
*Those who reported that they were either "beginning to implement in at least one unit" or "have resources identified to implement in the next year."

Source: Authors' (Jha et al.) analyses of data from the 2008 AHA Annual HIT Supplement of Acute Care Hospitals in the U.S.

Thirty-six percent of hospitals have implemented a computerized order entry system for medications in at least one unit.

Implementation of Decision Support Systems at Hospitals

n=386

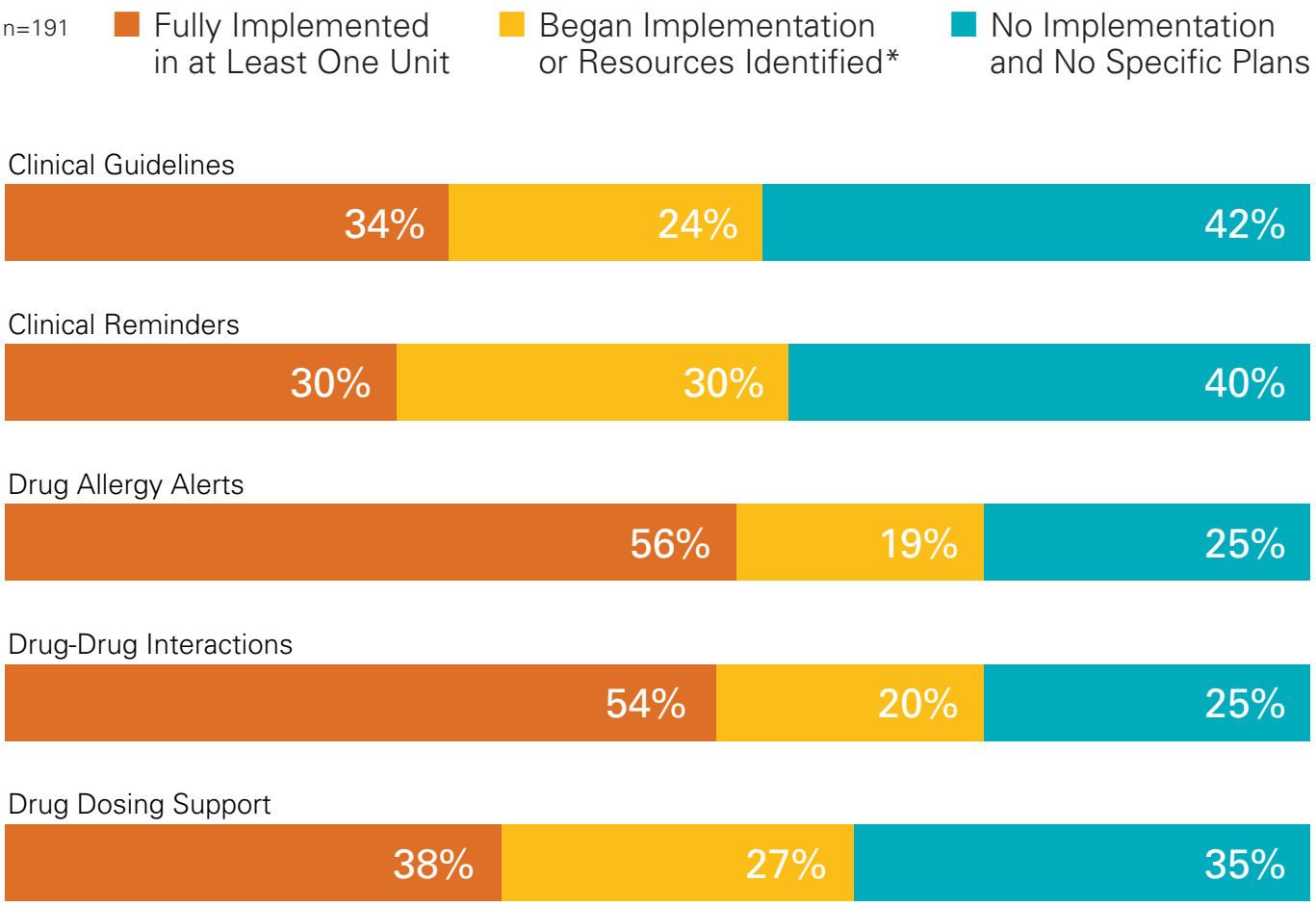


Note: Individual hospitals may have multiple installations of decision support systems, so the total may exceed 100 percent.

Source: HIMSS Analytics™ Database, 2010.

Nearly 90 percent of hospitals have installed decision support systems or are in the process of implementing one.

Prevalence of Decision Support Functions Implemented at Hospitals

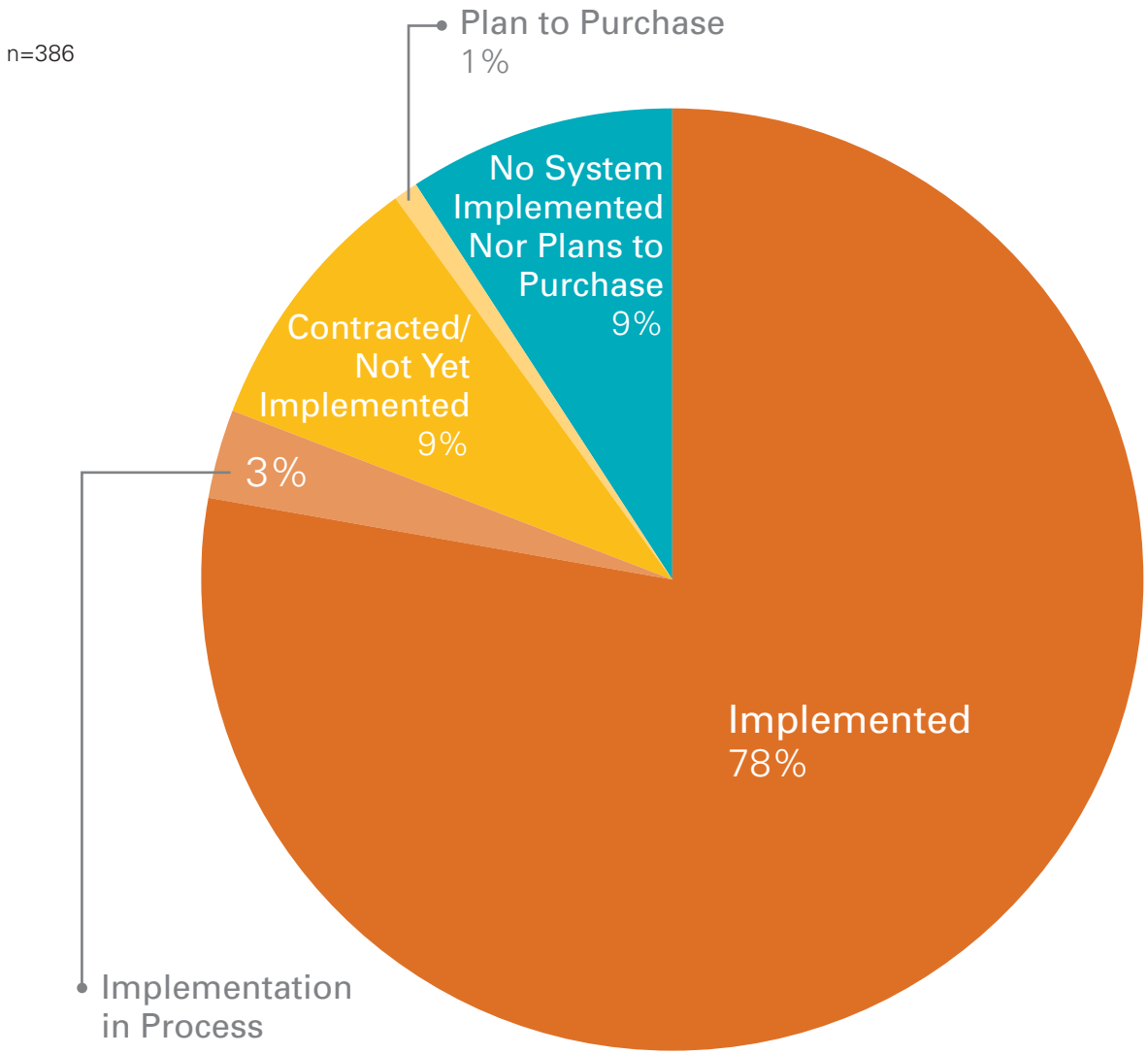


*Those who reported that they were either "beginning to implement in at least one unit" or "have resources identified to implement in the next year."

Source: Authors' (Jha et al.) analyses of data from the 2008 AHA Annual HIT Supplement of Acute Care Hospitals in the U.S.

Checks for drug allergies and drug interactions are the most commonly implemented forms of decision support.

Hospitals with Clinical Data Repositories

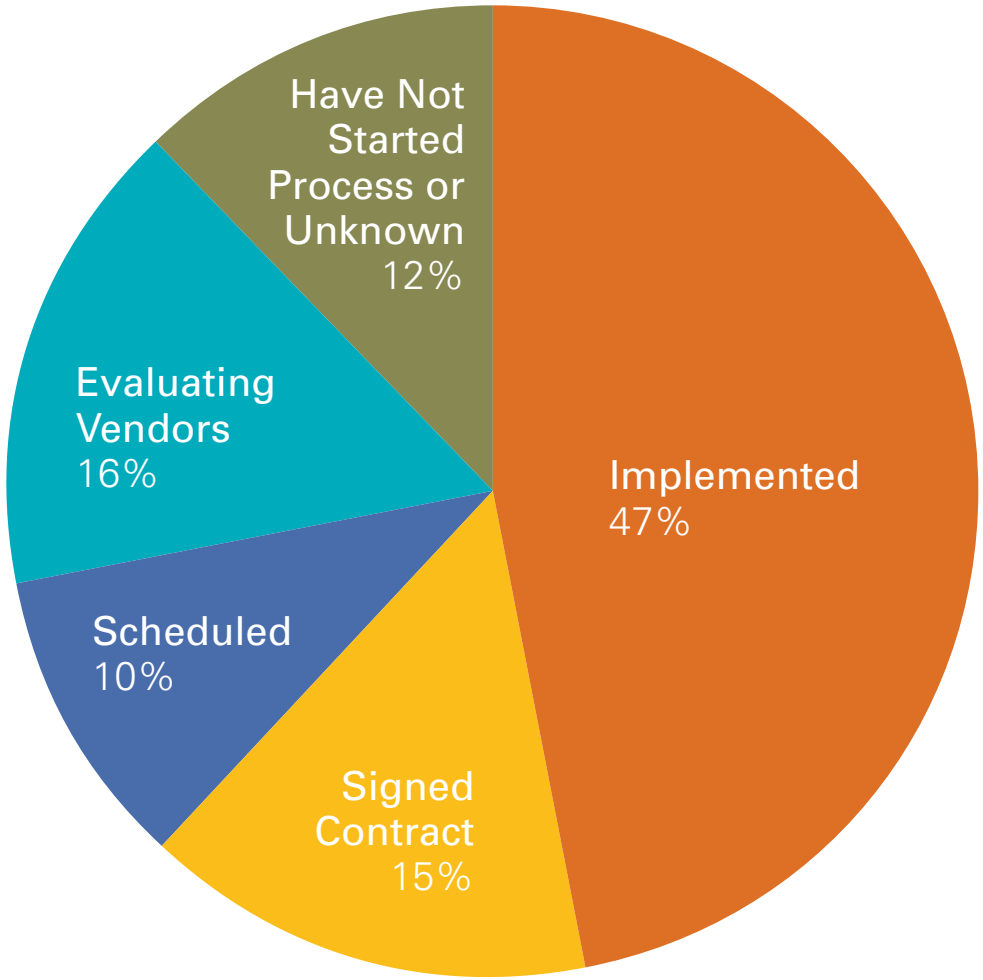


Source: HIMSS Analytics™ Database, 2010.

Clinical data repositories are prevalent in California hospitals; 78 percent of hospitals report current installations.

EHR Implementation at Community Clinics

n=151

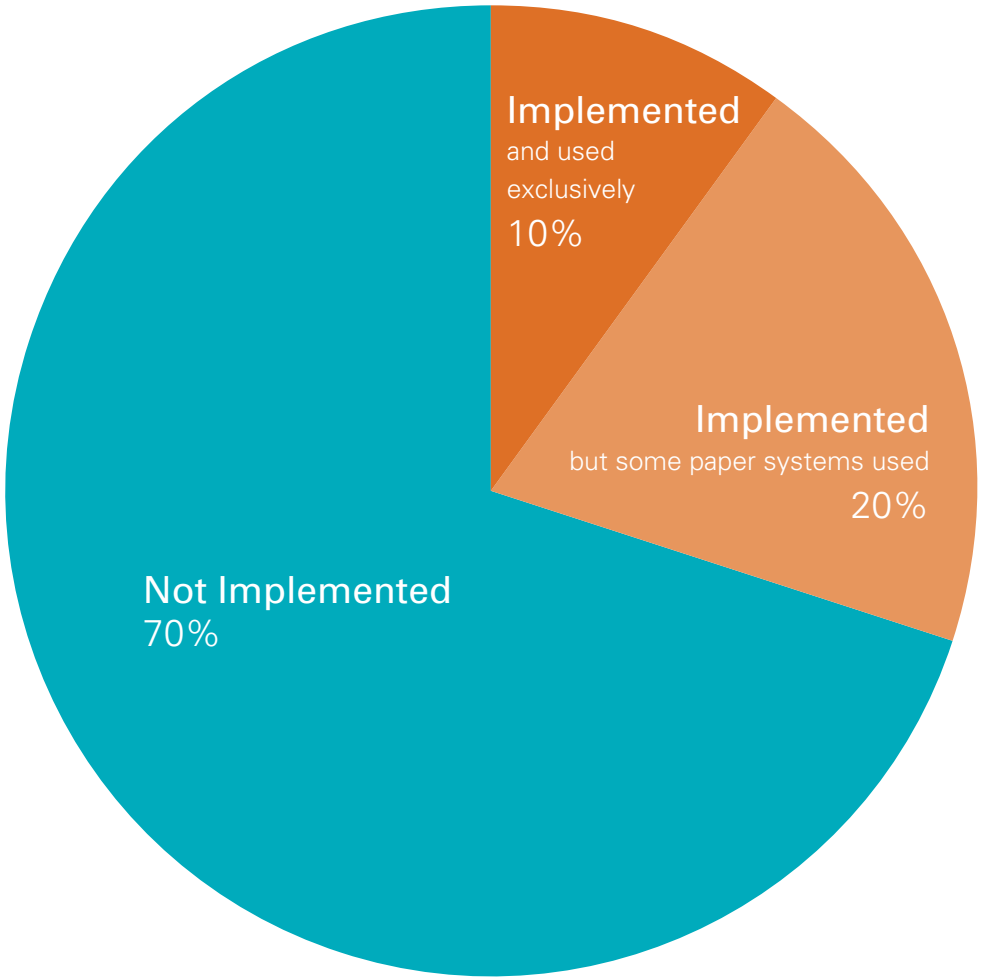


Source: AQICC MU, 2011.

Forty-seven percent of community clinics in California have implemented an EHR system. An additional 41 percent have begun the process of evaluating vendors, contracting, or scheduling an installation.

EHR Implementation at FQHCs

n=33

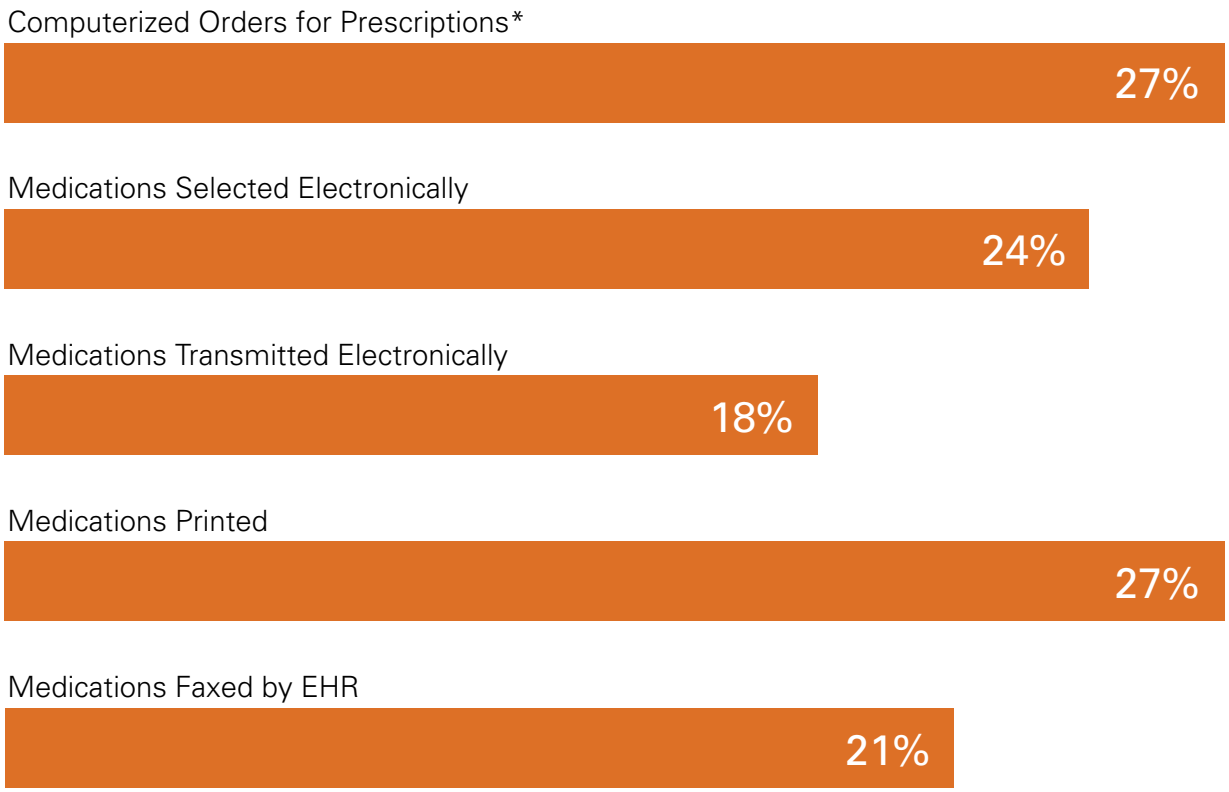


Source: NACHC HIT Survey of Health Centers, 2008.

Seventy percent of federally qualified health centers (FQHCs) in California do not have an EHR.

Electronic Prescribing Functions Implemented at FQHCs

n=33



Note: Respondents could answer "Yes" to more than one function, so the total may exceed 100 percent.

*Two organizations use standalone electronic prescribing systems not part of an EHR.

Source: NACHC HIT Survey of Health Centers, 2008.

FQHCs are using some electronic prescribing functions, but only 18 percent are transmitting prescriptions electronically.

Computerized Order Entry Functions Implemented at FQHCs

n=33

Note: Respondents could answer "Yes" to more than one function, so the total may exceed 100 percent.

Source: NACHC HIT Survey of Health Centers, 2008.

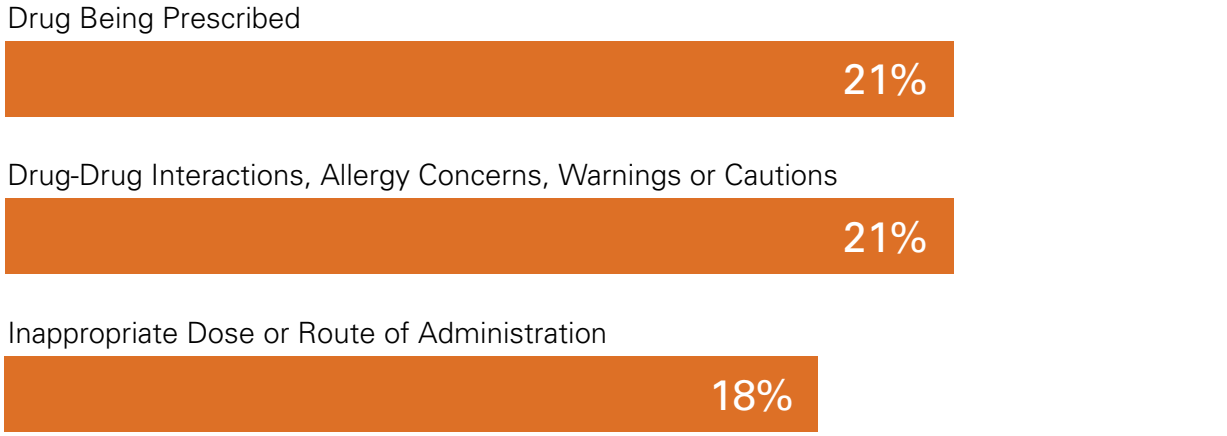
Over a quarter of FQHCs surveyed receive lab results electronically.

Decision Support Tools Implemented at FQHCs

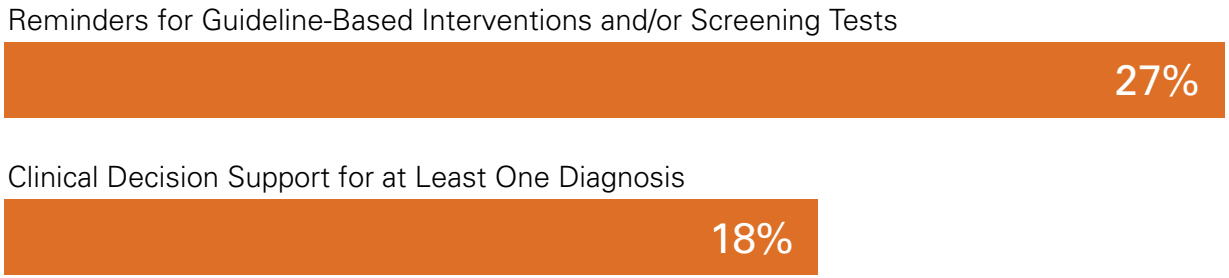
n=33

Medication Orders

Automated Prompts with Information on…



Clinical Notes

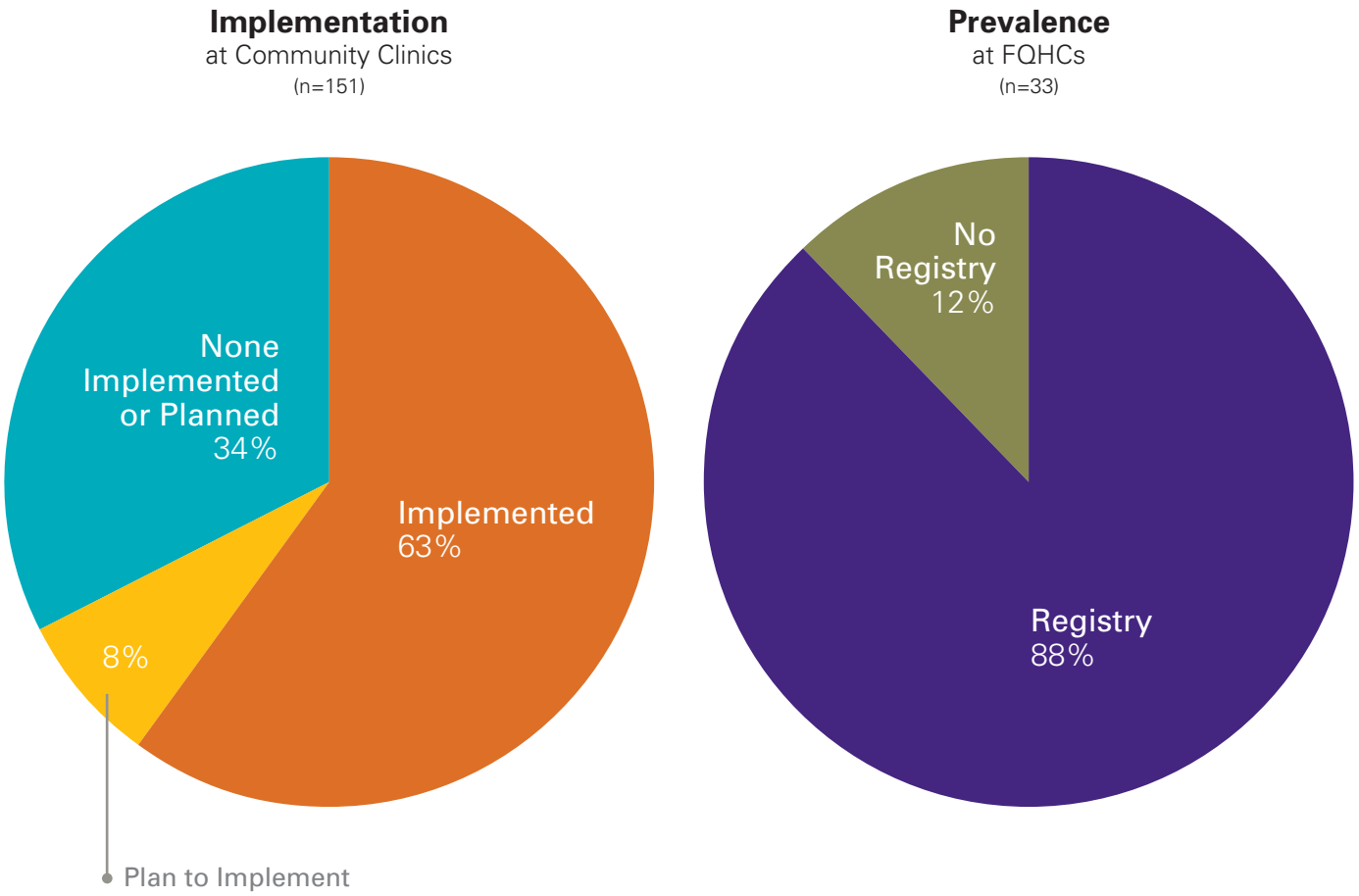


Note: Respondents could answer "Yes" to more than one function, so the totals for each table may exceed 100 percent.

Sources: National Association of Community Clinics survey, 2009. NACHC HIT Survey of Health Centers, 2008.

Between 18 and 27 percent of FQHCs use various decision support tools. Reminders for guideline-based interventions is the most commonly used tool, with 27 percent of organizations reporting use.

Disease-Specific Patient Registries at Community Clinics,
Implementation and Prevalence



Sources: AQICC MU, 2011. NACHC HIT Survey of Health Centers, 2008.

The strong majority of community clinics currently have or plan to implement disease-specific registries. Among FQHCs surveyed, 88 percent currently have a registry in place.

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FOR MORE INFORMATION

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Appendix | Sources, Methodologies, and Definitions

The slides in this presentation are based on data from seven independent sources, which used diverse methodologies to collect the data between 2008 and 2011.

The Center for Studying Health System Change (HSC), a nonpartisan policy research organization located in Washington, D.C., surveyed physicians for its nationally representative 2008 Health Tracking Physician Survey between February and October 2008. The sample of physicians was drawn from the American Medical Association physician master file, and included active, nonfederal, office- and hospital-based physicians providing at least 20 hours per week of direct patient care. Residents and fellows were excluded, as were radiologists, anesthesiologists, and pathologists. The survey includes responses from more than 4,700 physicians and had a 62 percent response rate. HSC estimates include responses from 535 physicians with practices based in California.

Harris Interactive, a market research firm, surveyed primary care physicians and pediatricians in 11 countries on behalf of the **Commonwealth Fund** between February and July 2009. Responses were collected via mail, phone, and online. For U.S. physicians, Harris drew a random sample of 1,442 physicians, including 484 California physicians, from the current American Medical Association physician master file. They obtained a 39 percent response rate in the U.S. and the California sample mirrors this response rate. For a more detailed description of the methods used in this survey, see Schoen et al. *Health Affairs* 2009;28(6): w1171–83.

SK&A, a Cegedim Company and provider of multi-channel health care marketing information databases and solutions, maintains an office-based physician database of over 700,000 U.S. physicians. The database contains physician contact information, as well as selections that provide ownership; size; health system and hospital affiliations; EMR use; physician access; and specialty information. SK&A has been compiling its databases for 28 years and the physician database is phone-verified every six months.

The **HIMSS Analytics Database™** collects data on 30,000+ acute care and ambulatory facilities in the U.S. Information in the database is updated annually and voluntarily by hospitals using a web-based process. The sample used for this report has 386 hospitals.

The American Hospital Association (AHA), in collaboration with researchers from the Harvard School of Public Health, the Institute for Health Policy, Massachusetts General Hospital, and George Washington University, surveyed all acute care hospitals that are AHA members. The survey was mailed to hospital chief executive officers in March 2008 to be completed by September 2008. Responses were received from 3,029 hospitals in the U.S., a 63 percent response rate. After federal hospitals and those located outside the U.S. were excluded, the final sample included 2,952 hospitals. The final California sample included 191 responding hospitals, a 50 percent response rate. For a more detailed description of the methods used in this survey, see Jha. et al., *New England Journal of Medicine* 2009; 360:1628–38.

The National Association of Community Health Centers (NACHC) 2008 HIT Survey of Health Centers was conducted by Michael R. Lardiere, LCSW, Director of HIT; Sr. Advisor Behavioral Health. The survey was a 15-minute online survey of its member organizations. It was distributed to 989 organizations and achieved a 37 percent response rate. For more information see www.nachc.com.

The **California HealthCare Foundation (CHCF)** awarded funds to the 13 Regional Clinic Associations of California (Consortia) and the California Primary Care Association (CPCA) to complete the **Aligning Quality Improvement in California Clinics for Meaningful Use (AQICC-MU)** initiative. This two-year project (August 2009 through July 2011) prepares California clinics for the "meaningful use" of EHRs and other health information technology to improve clinical outcomes and operational efficiency.

Data is collected at the participating clinic site level on four clinical measures and two operational measures, and the status of EHR and chronic disease management system (CDMS) implementation status. For the clinical and operational measures, data is submitted by clinics or consortia via a CPCA-managed web portal. The EHR and CDMS information is collected by each consortium about its member clinics, and consolidated at a regional and then state level before submission to CHCF. The data in this report was collected in January 2011.